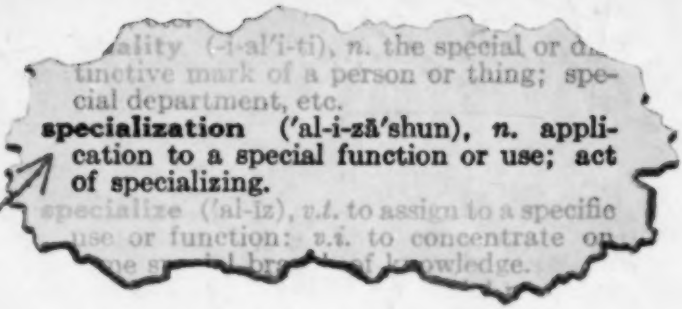
MAY, 1955

Industrial FINISHING

Published Monthly in the Interest of Product Cleaning and Painting by Practical Publications, Inc., 1142 N. Meridian Street, Indianapolis 4, Ind.

Webster says:


ality (-i-al'i-ti), n. the special or d
tinctive mark of a person or thing; spe-
cial department, etc.
specialization ('al-i-zā'shun), n. appli-
cation to a special function or use; act
of specializing.
specialize ('al-iz), v.t. to assign to a specific
use or function; v.i. to concentrate on
owledge.

● Years ago, Lilly Varnish Company adopted the policy of *specialization*. And, today, all of the Lilly Varnish Company plants and facilities are devoted exclusively to the formulation... research and development... and production of high quality INDUSTRIAL PRODUCT FINISHES.

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A *Blissful* BLISTER

If you are a furniture manufacturer plagued by cold-check worries, here is something you'll want to know about.

Interchemical has a new instrument that can determine the cold-check resistance or "D.P." (Distention Potential) of a wood finish in a matter of seconds.

The finishes are applied to a sheet of ductile copper, dried and placed in the machine which applies hydraulic pressure to the underside, forming a hemispherical blister in the metal. As the blister grows in size and area, the finish reaches and then exceeds its elastic limit, fracturing at a given instant to form a pattern similar to that shown in the picture. The height of the blister, as measured by a dial gage at the instant of fracture, is a measure of the distention potential of the finish. The whole test is performed in a refrigerated cabinet which can be maintained at any desired temperature.

EVERY BATCH of an IC Furniture Finish is tested in this manner to determine in advance its resistance to thermal shock.

The blister test, guarding against cold-check failures, results in a blissful feeling of security which is an extra dividend for users of IC wood finishes.

How's your D. P.? Winter will be back before you know it. Get ready for it NOW by asking your nearest IC Finishes Representative about I.C. D.P.-TESTED FURNITURE FINISHES TODAY!

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Finishes Division

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one of a series of advertisements on . . .

John L. Armitage and Company

organic finishes for industry since 1876

WE KNOW sometimes we can do lots of talking and not sell paint. We want to mention some of our standard finishing products and tell just one specific thing about each. At another time we would like to mention some of our special products. Perhaps some of these will ring a bell for you.

Surah (Wrinkle) Finishes. Non fouling—better than 250 sq. ft. per gallon in a single pass operation, on many applications.

Dip Enamels. Over 10 years of continuous dipping operation without draining tanks.

Appliance White Enamel. Also available many new shades being featured in today's modern kitchen.

Armorhide. Textured or smooth finish. 10 to 12 mils in single application. Abrasion resistance **1000** times better than baked enmel.

Vinylite Wash Primer. Dip, flow coat or spray. Equivalent to phosphate coatings for surface preparation. Air Dry 1 minute. Very low cost per sq. ft. for materials.

Armorlac Primer Air Dry. Excellent adhesion to bare steel for lacquer or enamel topcoats to follow.

Touch Up Enamels. Aerosol or brush to match any baking enamel we furnish.

Air Flash Primer. Air dry 90 seconds. Enamel Topcoats baked over this in one operation. No sanding required.

Roller Coat Enamels. Bake from 1 to 20 minutes depending on type of operation. May be fabricated or rolled from flat sheet or strip.

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Synthetic Enamels, Paints, Varnishes, Lacquers

245 THOMAS STREET . . . NEWARK 5, NEW JERSEY

PERFECTION IN

If your sales are lagging, color might be the answer. NATIONAL AFFILIATES' salesmen will be glad to discuss your product with you.

Color . . .

an essential for modern merchandising

Sales in the automotive field today are being sparked by the use of striking color combinations. Globe-Union, Inc.,* again leads the field with the introduction of their new brightly colored batteries. This introduction of color had to be accomplished without sacrifice of any of Globe's rigid performance requirements.

Globe Union demanded it . . . and got it!

PROTECTION...with HICOR

NATIONAL AFFILIATES develop special HICOR finishes which are adhesive to rubber and composition batteries . . . *tough* . . . *high hiding* . . . *easy to apply* . . . and extremely *corrosion resistant.*

The location of NATIONAL AFFILIATES' plants assure competent technical service and fast delivery to any of Globe's fourteen plants.

*Globe-Union, Inc., Milwaukee, Wis.

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DeSOTO PAINT & VARNISH CO.
Garland, Texas

CAROLINA PAINT & VARNISH WORKS
Greensboro, N. C.

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Leading manufacturers in both wood and metal are currently using our custom finish recommendations and our materials in the areas shown on the map.

Our service network has already been established to serve these customers with prompt shipments and technical assistance. If you are located in this neighborhood, you are invited to enjoy the advantages of our service coverage.

The Better the Finish, the Better the Buy

GRAND RAPIDS VARNISH CORPORATION

MAKERS OF THE FAMOUS Guardsman® *FINISH AND* Guardsman® *CLEANING POLISH*

GRAND RAPIDS, MICHIGAN

MAY, 1955
Vol. XXXI, No. 7

BPA

A monthly magazine for company executives, production superintendents, process engineers, chemists, purchasing agents, paint shop and finishing department foremen of industrial plants where product surface cleaning and painting are major operations in the manufacture of parts and products of all kinds.

Industrial FINISHING

W. H. ROHR, Editor P. C. BARDIN, Associate Editor

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31 THIRTY-FIRST YEAR OF PUBLICATION

Corrosion Resistant Bags in which to store metal parts for as long as ten years, are now available. Called Jet-Pak-VCI lined cushioned bags, they have double walls of sturdy moisture resistant kraft. They are stitched on each side to increase durability. Through the use of these bags, it is said that greasing and subsequent degreasing of parts is not necessary. The bags may be easily marked for identification. The liner is non-toxic, non-irritating and non-inflammable. They are also available without liner, where rust and corrosion resistance is not important.

* * *

Automatic Box Printer. The Marko printer has been developed for automatic production line printing of identification legends, lot numbers, codes, dates, etc., on metal cases or boxes.

The machine is self synchronizing, therefore it may be placed in the line to receive boxes at regular or irregular intervals from the conveyor, or it may be manually fed. Quick drying inks permit printing speeds up to 100 units per minute with no smudging. Interchangeable rubber type or dies permit copy change in a matter of minutes. A product of Adolph Gottscho, Inc., Hillside 5, N. J.

Prints parts and products continuously.

* * *

Toys in '55 are leaning toward the scientific and the increasingly popular "do it yourself" side. At the 17th annual conference of the Toy Guidance Council, recently held in New York City, chemistry sets good for "500 harmless experiments", craft sets and quiz games were shown along with a bright red KD sports car, ready for assembly. This was battery powered. Of course we still have dolls, cowboy outfits and Buck Rogers equipment.

* * *

Air Conditioning. Now that hot weather is approaching (in the North Temperate Zone) the release of a survey of 75 industrial plants in Metropolitan New York should prove interesting. The survey showed that in the average plant without air conditioning of any sort, the equivalent of $108 in wages for each employee is lost during the year.

Depending on the location of the plant, there are about 100 days in the year when heat and humidity are responsible for some absenteeism or work slow-down. This is something to think about. *[Cont'd on page 8]*

A Five★Star General Finish!

DOLVAR
BURN RESISTING

★ BURN RESISTING
★ HIGH-SOLIDS
★ WATER WHITE
★ HAMMER-TOUGH
★ NON-MARRING

DOLVAR IS THE ANSWER to Most WOOD Finishing Problems. NON-Yellowing. Will not cold-check, print, soften or pad-mark. Holds colors better. Withstands alcohol, water, nail polish, lacquer thinners, etc. Does not blister or mark in cigarette test.

Order a Drum today...Satisfaction Positively Guaranteed.

Ask for folder, "WHY DOLVAR."

"From the start consider the Finish"

V. J. DOLAN & COMPANY, Inc.

Manufacturers of "Unquestionable Quality"

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PRACTI-KREME . . . an effective skin protector and cleaner for over 16 years. Applied before work to provide flexible, fat-based coating over skin. Moistened and rubbed to a lather after work, Practi-Kreme removes paint, lacquers, etc. without skin irritating solvents.

PHLO WATERLESS . . . removes paints and lacquers fast. Contains *both* silicone and lanolin for double protection. Safe and easy to use, Phlo Waterless is milky white, smooth in consistency.

Write for **FREE** Test Samples Today

the
CHEMICAL CORPORATION
82 WALTHAM AVENUE, SPRINGFIELD, MASS.

If you cannot afford air conditioning, perhaps it is possible to move some of the man-made sources of heat such as ovens. These may be moved to the roof of the plant or elevated to ceiling height, with exhaust fans to remove the excess heat.

Exhaust fans will also aid in removing heat and moisture from around surface preparation tanks where solution temperatures range from 160° to 212° F.

Comfortable working conditions pay off in greater and more efficient production.

* * *

Labels Identify New Drums. The steel shipping Container Institute, which represents in excess of 95% of the production volume of the entire industry, announces that all new containers will bear a distinctive "Red-S" trademark label.

Members of the Institute produce more than 125 million steel containers annually. Labelling of containers is expected to accomplish two purposes. It will advise both shipper and user that the material is shipped in a new container instead of one that has been reconditioned; and it is expected to promote the use of more new containers.

* * *

New Electronic Watchdog makes it possible to test and control continuously an unlimited number of industrial processes.

The instrument, called an indicating scanner, monitors a variety of process variables involving level, temperature, thickness, mechanical movements, tolerances, weight and pressure. It will keep a steady check on six, 12, 24, 48 and more steps in a manufacturing process.

The speed of scanning depends on the number of points to be checked, with a minimum rate of one per second. [*Continued on page 130*]

IT'S TO YOUR ADVANTAGE TO BUY ALL YOUR FINISHING MATERIALS

from **SPRUANCE** *Quality*

SINCE 1906

Fifty years' experience has perfected not only our products, but our advisory and delivery services. Your finishing problems—whether wood or metal—lacquer or paint—are assured careful, dependable solution.

Our modern laboratory and manufacturing plant, staffed by practical as well as technical specialists, is at your disposal.

Let Spruance shoulder your troublesome worries.

Buying all your finishing materials from one source promotes dependable uniformity of quality and appearance.

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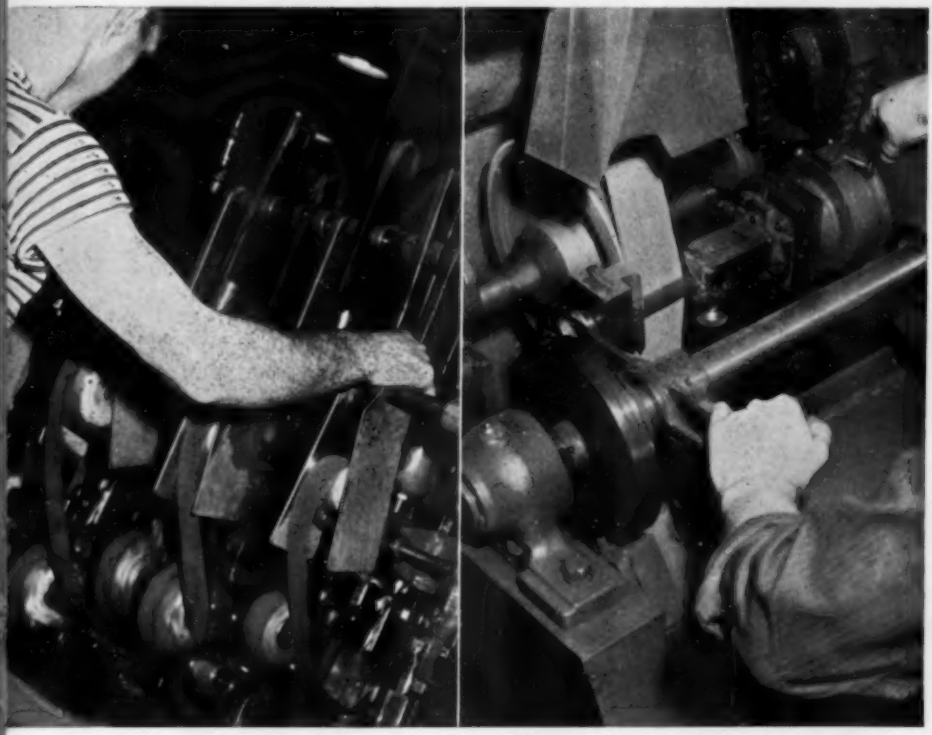
CALL YOUR CARBORUNDUM DISTRIBUTOR or salesman today... listed in the yellow pages of your phone book under "Abrasives" or "Grinding Wheels." He'll recommend the coated abrasive designed for your particular operations... give you a demonstration in your own shop, on your own equipment.

FREE! COATED ABRASIVE SELECTOR helps you choose the proper abrasives for every application. Write The Carborundum Company, Dept. IF 82-54, Niagara Falls, New York. In Canada: Canadian Carborundum Company, Ltd., Niagara Falls, Ontario.



● Polishing crankshafts with abrasive tape on automatic machine.

● Grinding jet aircraft blades on abrasive belt machine

...your **TOUGHEST** *production* **SCHEDULES!**

For grinding, finishing or polishing any kind of metal...with portable equipment or complex automatic machines...the *proper* coated abrasive products and techniques developed by CARBORUNDUM can save hours of production time, cut your costs, and give superior results on every job.

TOP QUALITY abrasive grain—silicon carbide and aluminum oxide—durable cloth and fibre backings, and tough resin bonds with greater holding power, combine to give you belts, tapes, discs, sleeves, cones and rolls that cut faster, last longer and produce better finishes.

SPECIAL ATTACHMENTS developed by CARBORUNDUM save time and money, too! The "61" PORT-A-BELT Grinding Attachment, for example, lets you bring the abrasive belt to the work...gives fast, low-cost grinding on any surface—flat, convex or concave. *One* operation with PORT-A-BELT replaces two or three with conventional tools.

CARBORUNDUM

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...continually putting more **SENSE** *in your abrasive* **DOLLAR**

82-54

Cincinnati
Owners Report
"better results . . . saving 66⅔% in time and labor"
"120% more production"
"tremendous time and labor saver . . . time saved, 75%; labor saved, 81%"
"save 60% in time"
"simple in design, economical in operation"
"cleans and finishes 1000 parts per hour in 16' x 40' floor space"
"processes 8 tons of parts daily . . ."
"handles both prime and finish operation; saves space."

What do your part cleaning and painting operations cost?

• too much? • about normal? • don't know?

There's an easy way to find out. A Cincinnati Cleaning engineer will gladly survey your present or future requirements and give you a no-cost, no-obligation answer that may point to savings as important as those quoted above. Whether you're interested in cleaning alone or a space, time and labor-saving integral finishing system, Cincinnati has the experience and technical knowledge to give you a straightforward estimate of possible savings.

Cincinnati

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gives your products
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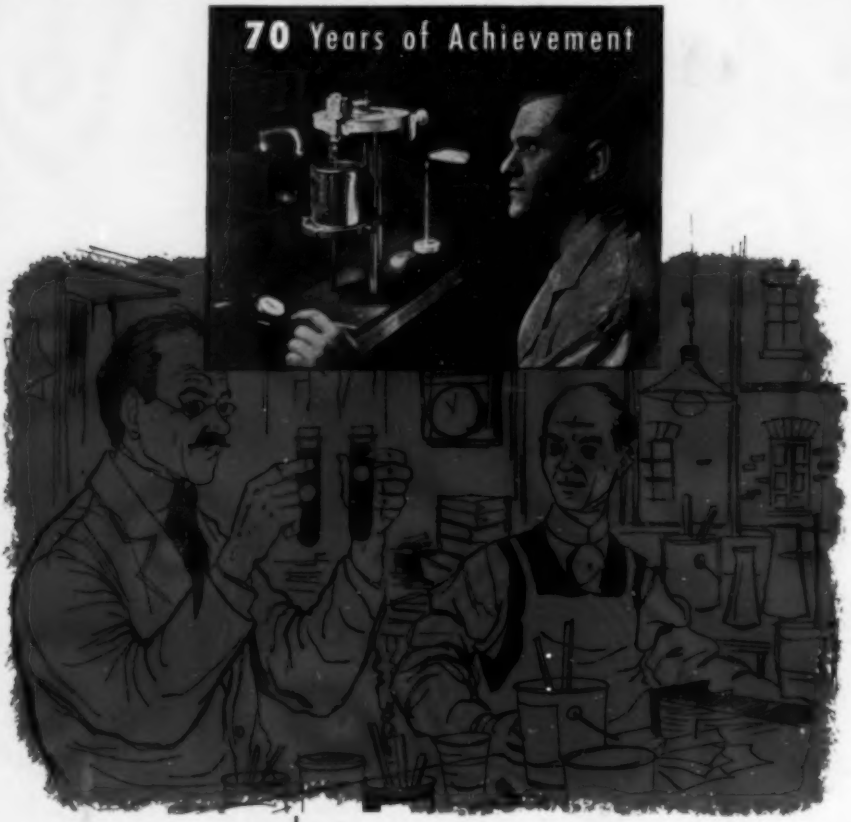

Gone are the days when grandpa tested paint with two vials and an air bubble in each.

Today, split second accuracy in testing the viscosity of paints is a routine job in TOUSEY's product development laboratory. Here carefully trained personnel use the latest testing equipment and instruments to assure TOUSEY customers of the finest in paints, lacquers, varnishes, and sealers. Seventy years of steady growth and achievement are celebrated this year at TOUSEY.

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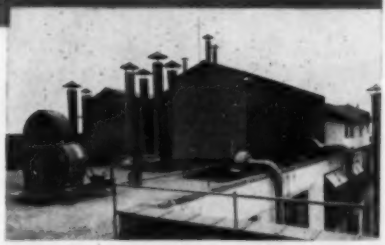

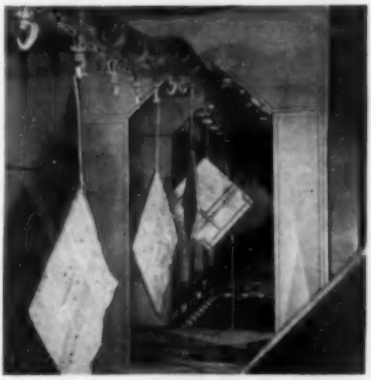

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SYSTEMS' STORY

Compare these figures

—of Mills Industries of Chicago—system including Burdett Bonderizing Unit, Dry-Off Oven, Prime Coat Oven and Finish Coat Oven. Presently, at partial capacity, production is 16,000 pounds per 8 hour day at an average fuel cost of approximately $1.00 per hour per oven.

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Production ranges from small parts carried on trays to large 6'6" x 30" x 30" frame and cabinets of bottle dispenser cases and other types of dispensing units.

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Colors include the spectrum in both wrinkle finishes and enamels.

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There is no obligation

—for recommendations. See results on your own type of work here at our plant, in our test ovens. Hear the whole story and meet competition on even ground.

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SAVE ON SOLVENTS

REDUCE HEALTH HAZARDS

MAINTAIN UNIFORM VISCOSITY

DESIGNED TO FIT YOUR NEEDS

BECAUSE PRESSURE AND NOT AIR ATOMIZES THE PAINT

Note the absence of special hoods, spray booths and protective clothing. This man is spray painting overhead crane rails where it suits him best . . . on the spot.

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The revolutionary Bede System incorporates the application of heated materials and hydraulic pressure . . . eliminating entirely the need for compressed air for atomizing purposes.

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DEPT. I.

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AIR DRY BAKE	DIP SPRAY BRUSH

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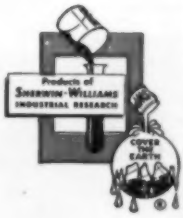
the ONE custom-quality industrial enamel that does the job of NINE!

Just ONE close-at-hand industrial enamel—KEM LUSTRAL—today can prove the answer to MANY of your present finish problems.

KEM LUSTRAL combines, in one material, a range of usefulness that usually could only be obtained with several. It can be brushed, sprayed or dipped—air dried or baked. It is equally useful as a product finish or for maintenance. It provides enduring protection—brilliant, sales-stimulating color—for thousands of products, both wood and metal.

KEM LUSTRAL is locally available through Sherwin-Williams Branches throughout the country. Call your nearby Branch or write for color card and details.

SHERWIN-WILLIAMS INDUSTRIAL FINISHES



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- ☐ Dimenso® (Hammered Finish)
- ☐ Industrial Lacquer
- ☐ Fast Bake Enamel

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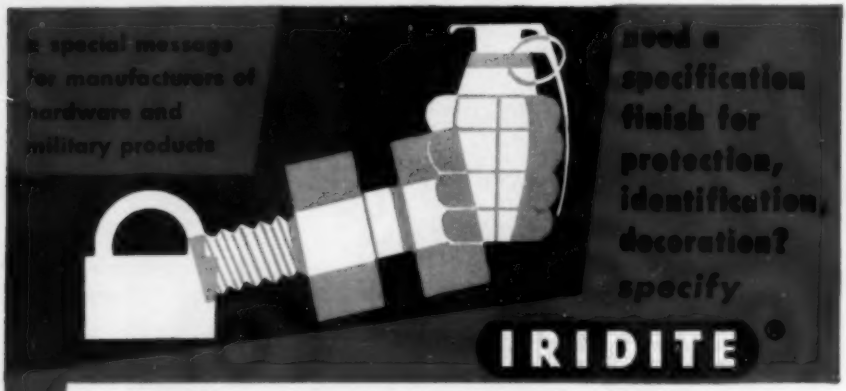

Specify Iridite . . . to meet military specs for corrosion protection during use or storage . . . for paint adherence . . . for low cost color coding . . . or to add quality and sparkle to your products. Here's how you can use Iridite:

ON ZINC AND CADMIUM you can get highly corrosion resistant finishes to meet any military or civilian specifications and ranging in appearance from olive drab through sparkling bright and dyed colors.

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ON ALUMINUM Iridite gives you a choice of natural aluminum, a golden yellow or dye colored finishes. No special racks. No high temperatures. No long immersion. Process in bulk.

ON MAGNESIUM Iridite provides a highly protective film in deepening shades of brown. No boiling, elaborate cleaning or long immersions.

AND IRIDITE IS EASY TO APPLY. Goes on at room temperature by dip, brush or spray. No electrolysis. No special equipment. No exhausts. No specially trained operators. Single dip for basic coatings. Double dip for dye colors. The protective Iridite coating is not a superimposed film, cannot flake, chip or peel.

WANT TO KNOW MORE? We'll gladly treat samples or send you complete data. Write direct or call in your Iridite Field Engineer. He's listed under "Plating Supplies" in your classified telephone book.

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Industrial FINISHING

May 1955 Issue

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Many inquiries come to INDUSTRIAL FINISHING Magazine for information about technical problems, methods and processes; and for sources of supply for materials, equipment and supplies to be used in connection with surface preparation and conditioning, paint application, sanding, paint drying and baking, rubbing, polishing, etc.

Surfaces to be completely or partially coated for protection, decoration or for any other purpose, include components and articles made of metals, plastics, woods, and composition materials; also paper, leather, rubber and fabrics.

The services of testing laboratories, finishing consultants and special technicians are often requested. These inquiries are promptly answered. As a result, new products, materials and sources of information are continually being uncovered; valuable contacts are made and timely suggestions for future articles to be published are developed.

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give you higher quality

and a price advantage, too

LACQUER solvent systems based on *ketones* have so many inherent advantages they have become standard with the nation's foremost formulators of both nitrocellulose and vinyl coatings. Here are a few good reasons why:

- **Complete flexibility in formulating.** You add the latent solvents you prefer.
- **Yield solutions with high solids content**—or permit high diluent content, with either *aromatics* or *aliphatics*.
- **High purity . . .** *at no extra cost.* You get *all* active solvent.
- **Impart excellent flow,** blush resistance, high gloss.
- **Price advantage, too!** Low specific gravity ketones favor *you* when you buy by the pound and sell by the gallon.

The Shell Chemical "quality group" of solvents includes MEK, MIBK, EAK, MIBC, IPA and Ethyl Alcohol. Ask your Shell Chemical representative to help you evaluate ketones for your own formulations.

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CHEMICAL PARTNER OF INDUSTRY AND AGRICULTURE

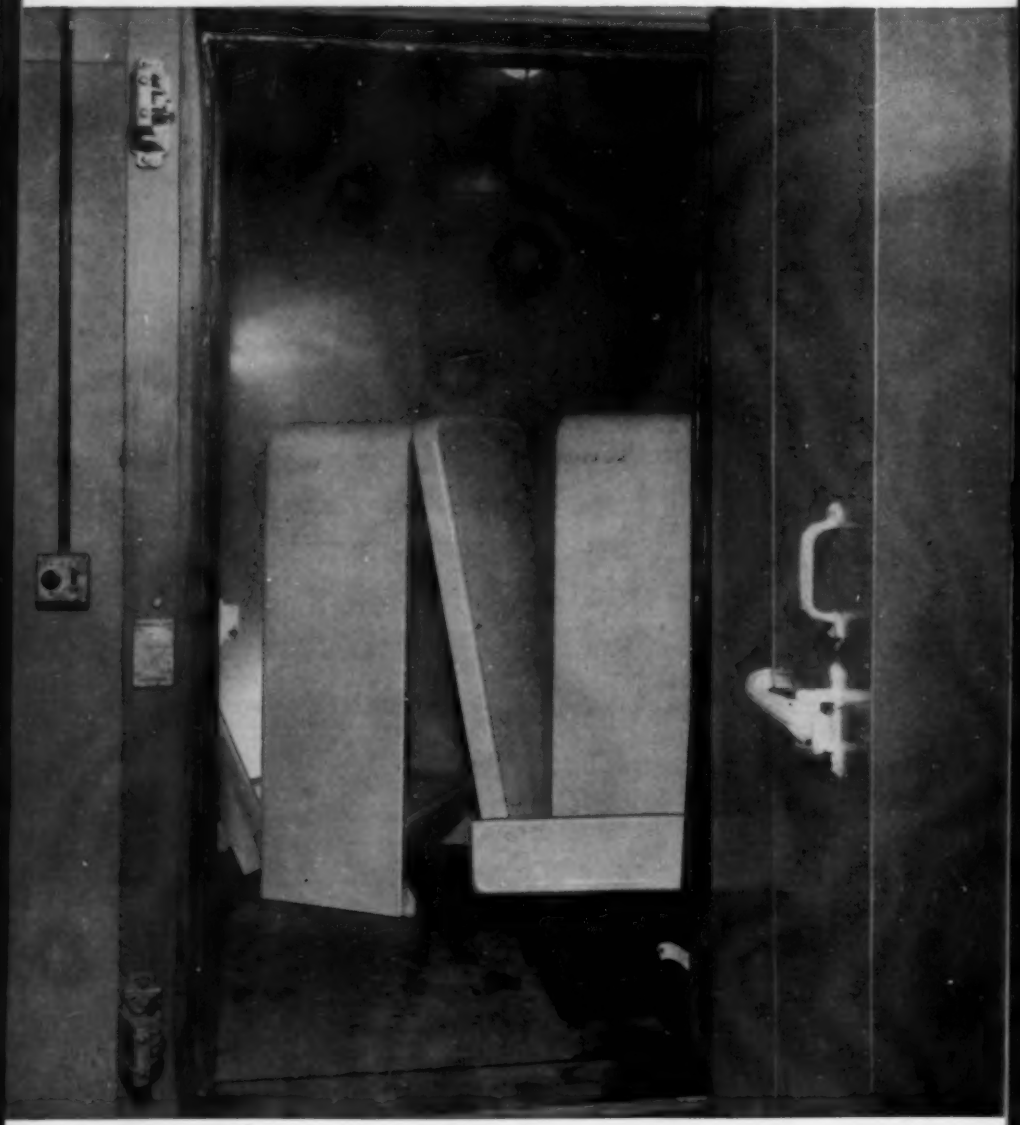
380 Madison Avenue New York 17, New York

Atlanta • Boston • Chicago • Cleveland • Detroit • Houston • Los Angeles • Newark • New York • San Francisco • St. Louis

IN CANADA: Chemical Division, Shell Oil Company of Canada, Limited • Montreal • Toronto • Vancouver

THE WEATHER:

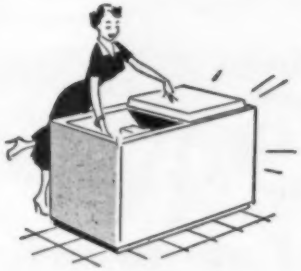
Warm and Muggy, all year long...



SALES OFFICES AND FACTORIES: San Francisco, Los Angeles, Chicago (Nubian Division—1855 North Leclaire Avenue).

THE FINISH:

Nubelite — for Lasting Performance



In this humidity room, at left, NUBELITE*-finished refrigerator and freezer panels get an accelerated torture test to make sure the finish will stand up in the home.

Leading manufacturers use NUBELITE formulas that provide maximum humidity resistance while also providing the other properties required for satisfactory service life and appearance.

NUBELITE formulas incorporate the specific resistance properties required by the nature and function of each particular product.

Manufacturers are invited to call on Glidden Technical Service with problems of surface preparation and film application for any product.

*A Glidden Trade Mark

THE GLIDDEN COMPANY

INDUSTRIAL FINISHES DIVISION

11005 Madison Ave. • Cleveland 2, Ohio

Minneapolis, St. Louis, New Orleans, Cleveland, Atlanta, Reading. Canada: Toronto and Montreal

PROBLEM:

How to make short work of a long finishing job

SOLUTION:

Install a Fostoria Radiant Oven

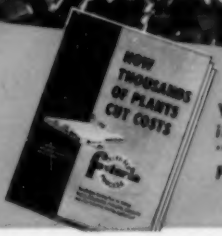
Fast? A Fostoria Radiant Oven heats at the *speed of light* . . . requires no warm-up . . . bakes out a finish in a fraction of the time required by convection ovens.

You *save space*—cut costs to the nub—improve product quality. Read the Tinnerman case history at the right.

- Cuts drying time 74%.
- Tinnerman Products, Inc. makes fasteners—by the millions.
- Before Fostoria was called in, they were finished in two fuel-fired batch ovens with great waste in time and motion.
- Two Fostoria Radiant Ovens cut drying time from 30 to 8 minutes—freed one worker for other tasks—improved work conditions.

Savings like this may be possible in your operation. Call your Fostoria Representative for the complete story.

INFRA-RED fostoria SYSTEM



Write today for informative booklet, "How Thousands of Plants Cut Costs."

THE FOSTORIA PRESSED STEEL CORPORATION
Dept. 521, Fostoria, Ohio

5502

Watson-Standard's EXPERIENCE IN FORMULATING SPECIALIZED COATINGS IS INVALUABLE TO METAL FINISHERS

If your product includes metal finishing in its manufacture, it is wise to consult the Watson-Standard Laboratories on your coating problems. The services of our laboratory and field technicians are available without obligation.

"Knowledge, skill and technique through Experience"

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W-S

INDUSTRIAL FINISHES • PAINTS • PLASTICS • CHEMICALS

Management team at Fluorescent Fixtures. From left to right, Bob Thallon, assistant sales manager and chief engineer; C. D. Buchanan, sales manager; Ernst Anders, president; Jim Rutledge, controller, and R. H. Shaffer, works manager (and author of this article).

How and What We Gained by Spraying Electrostatically

"Design and build the most modern fluorescent fixture plant in the industry."
That is the job I was given by our company.

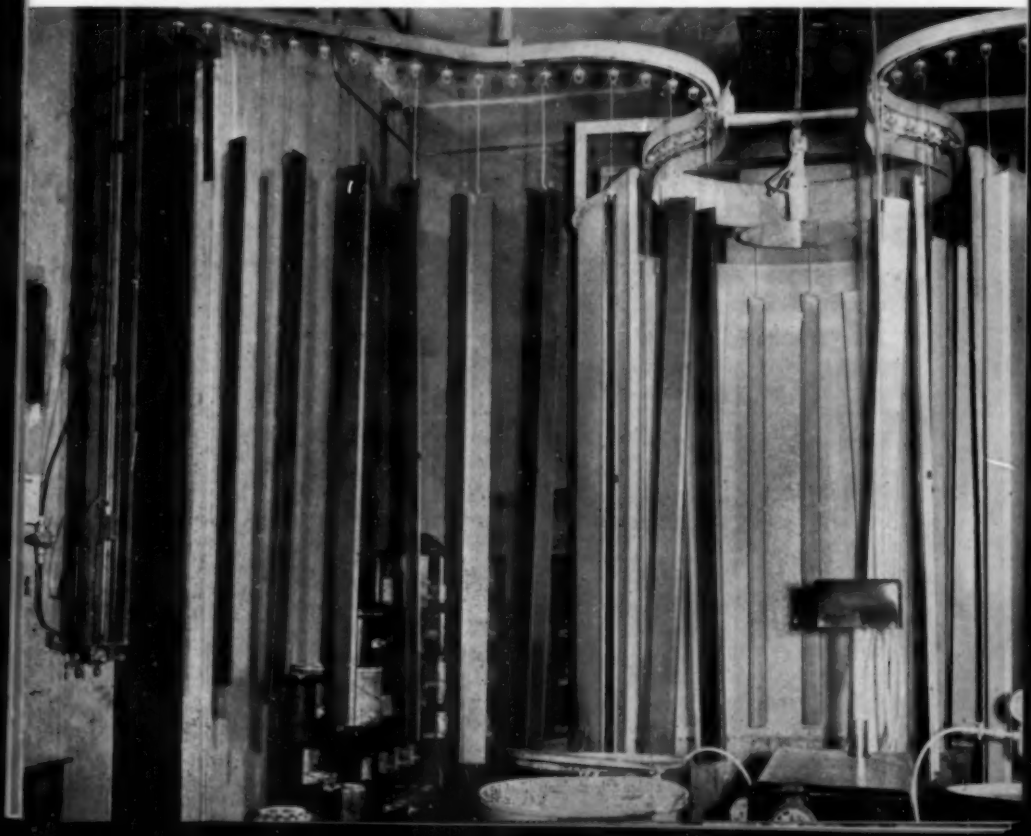
By R. H. SHAFFER, Works Manager
Fluorescent Fixtures of California, South San Francisco

WE HAD outgrown our older quarters for the third time in eleven years. This time we were able to start from scratch, unhampered by any existing building or equipment. We could select the best location, build the best plant, and install the finest equipment available. This, as far as we knew, would be the first time a western fluorescent fixture company of our size was to occupy a plant designed, built and equipped from the ground up for this type of production.

Our Baked White Enamel Finish Had to be Just Right

The manufacture of fluorescent fixtures is divided into three principal operations: metal fabrication, cleaning and finishing, and final assembly. Of the three, finishing is in many ways the most critical. It

Where the conveyor, moving left to right, loops around the applicator disc. The parts being coated rotate as they travel around the loop. The disc applicator travels up and down to coat these parts along their full length. Painting takes place in a highly charged electrostatic zone, so there is practically no overspray.



has everything to do with the appearance of the product. And in addition, the baked white enamel reflecting surfaces must have high reflectivity, with a minimum of variation, and great durability.

If the finish has good appearance and reflectivity, but does not hold up in service, it is unsatisfactory. If it is too costly it will price the fixture out of the market. For these reasons it was important that we concentrate our efforts on developing the best possible method to produce the desired results in mass production but with complete quality control.

We knew that proper metal preparation was important so we selected a conveyorized multiple stage washer employing a well known product for the phosphatizing stage. This was built for us by a concern in San Leandro, Calif., and designed to handle parts up to 10-ft. long when hung vertically. A capacity of 15 tons of sheet metal per shift was provided.

We Looked for a Better Way To Apply Baked Enamel

The method of applying our heavy, glossy coat of baked enamel was our main concern. We knew we were wasting a lot of the paint we had been applying by hand spray. Also, our entire production relied on the skill and availability of 14 spray men, seven on each shift, who labored in front of 24-ft. of water-wash spray booth.

It seemed that there should be a better way to do this job and we decided to find out what it was. We knew that electrostatic spraying is a more efficient way to apply enamel but it did not appear that the methods at first available would tolerate the wide variation of parts required to be painted, and do so without too much batching of similar parts.

We Wanted to Hang Parts Vertically from Conveyor

We had pioneered, in our area, the method of hanging fixture parts vertically from an overhead conveyor and wished to continue to use this method. Many of our parts are 8-ft. long and more, while others are no more than an inch or so square. We wanted to hang these all on one line and to intermingle them occasionally as required.

This requirement introduced an almost insurmountable obstacle to any known method of automatic spraying. We had reluctantly concluded to continue our hand spray when fortunately for us the reciprocating disc modification of the No. 2 Process of electrostatic spraying became available.

At this point, we had already let contracts for several pieces of equipment, and construction on our new building had begun. If a change were to be made it had to be done quickly. It was just three days later that experimental painting was begun on our parts in Ransburg's Indianapolis laboratory.

Electrostactic (No. 2) Spraying in Laboratory Showed the Way

One week later we had decided to radically change our plans and to electrostatically spray essentially all of our fixture parts. This meant that we could cancel our order for some of the equipment since the

eye appeal—buy appeal
economy in labor . . .

MULTAKOLOR

One Spray Coat Gives a Textured Finish of Two or More Colors

MULTAKOLOR is the ideal modern finish for practically any product—furniture, TV, radios, cabinets, toys, chests, appliances and specialties, etc. Works with the same wonderful results on wood, composition board, wall board, beaver board, asbestos board, paper, gypsum, masonite, ferrous and non-ferrous metals and many other materials.

Goes on smoothly with standard spray equipment, AIR DRIES IN 15 MINUTES to touch, can be handled in one hour. No overspray—which means a further saving in material and labor. Provides a rich textured finish of 2 or more separate and distinct colors . . . amazingly durable and long-wearing. Excellent covering quality hides imperfections and surface blemishes. 30 stock color combinations to choose from. *Customized Multakolor made to your requirements on minimum sized orders.*

Try **MULTAKOLOR** and see for yourself. Send for free sample and complete information today, without obligation. Technical consultation available on request.

NEVER BEFORE
In the Quality of Multakolor
ONE COAT BAKE MULTAKOLOR
On Bare Steel Conforming to Most Bake Schedules

PAINTS • SYNTHETICS
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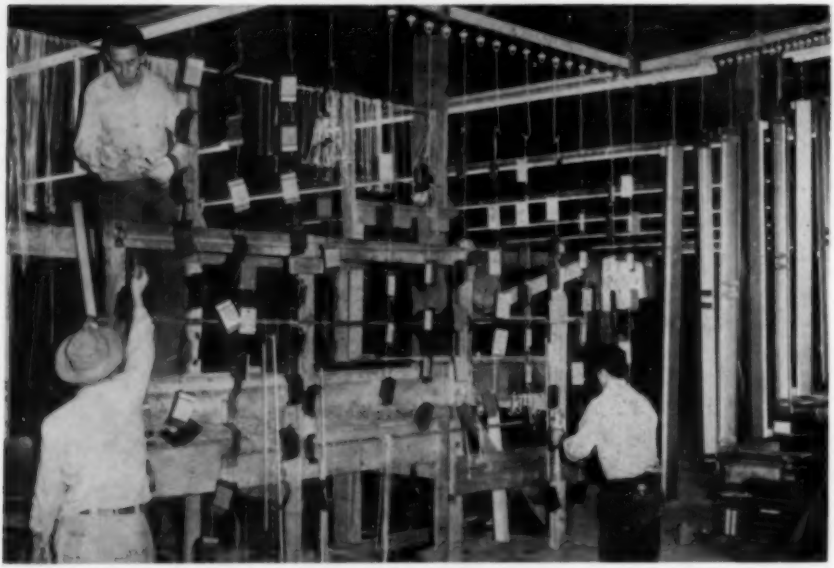
LACQUERS • ENAMELS

United LACQUER MFG. CORP.
LINDEN, N. J.



Loading zone. A wide variety of parts of different sizes are hung from overhead conveyor.

No. 2 Process of electrostatic spray painting requires only the exhausting of solvent fumes. An auxiliary conveyor and booth planned for the 2-coat painting of "egg-crates" was eliminated because the electrostatic disc, plus touch up, accomplished this in only one pass. These changes were made rapidly by working closely with our prime suppliers of finishing equipment. Necessary changes in the layout of the finishing department were made to design and operate the installation around the No. 2 Process.

Result: More Production, but Less Labor and Less Paint

In the middle of January 1955, we began our first testing of the finishing equipment, most of which had been installed by then. On January 23 we began running production through our finishing line and that same week we shut down our old plant's hand spray line. Metal working equipment had been transferred over from the old plant to the new one, some 10 miles away, without more than one day's lost production. Within four weeks, we were producing 110% of our former capacity (at the old plant) with a reduction of 18% in labor! I had expected a great deal from this system and it had really worked out better than we expected.

Where did our savings come from? Some savings were made in better material handling equipment and better working conditions because of proper layout and adequate working space. Some savings in

gambling with flammable solvents?

Switch Now to Dow's New

CHLOROTHENE

(1,1,1-trichloroethane, inhibited)

- **No fire hazard**
- **Extremely low toxicity**
- **Extra-high solvency**
- **Rapid Dry Time**

Chlorothene is the answer to the search for a cold cleaning solvent that eliminates fire hazard—that equals carbon "tet" in cleaning power and yet is only 1/20 as toxic.* Chlorothene has no flash point—no fire point. Chlorothene permits cleaning of common metals including aluminum with relative safety from corrosion.

*M.A.C. 500 p.p.m.

In addition to Chlorothene, your nearby Solvents and Chemicals Group Member carries a complete stock of cold cleaning and vapor degreasing solvents. Order by drum, tank wagon, transport or tank car. You're sure of speedy service . . . of products from nationally-known suppliers when you call on the Solvents and Chemicals Group.

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Western Solvents & Chemicals Co. (Canada) Ltd.
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Wisconsin Solvents & Chemicals Corp.
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Wolverine Solvents & Chemicals Co.
1500 Century Ave., S. W.—CHerry 5-9111
Grand Rapids, Michigan

both labor and materials were made by going to automatic cleaning and phosphatizing equipment. *By far our biggest single saving, however, was in the installation of the No. 2 Process of electrostatic spraying. One day we had 14 spray men; next day we had only two. One day we used 180 gallons of paint; next day we used only 75. Fantastic? It may sound so but it is a fact. And, at the same time, production was increased.*

Clean; Phosphatize; Rinse; Chromic Acid; Dry-off

Our finishing system consists of 425-ft. of overhead monorail conveyor running at the rate of 6-ft. per minute. During loading it is at a 10½-ft. elevation; then it runs up to 14½-ft. to pass through the 68-ft. washer and dry-off oven. The washing and phosphatizing consists of the following stages:

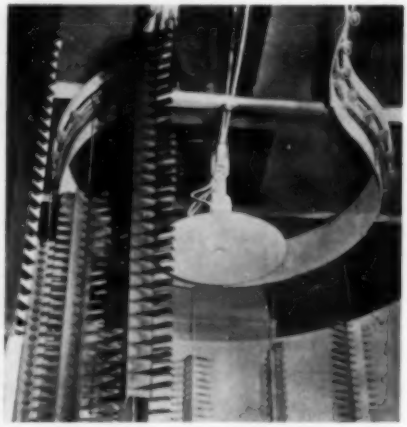
1) Into a CrysCoat No. 89 spray, held at 155° F., in which cleaning and phosphatizing are accomplished.

2) Then into a warm water rinse at 145° F.

3) Next into a cold water rinse.

4) Thence to the chromating stage which is kept at 175° F. and;

5) Finally into a dry-off oven held at 350° F. for 2½ minutes. Thereafter, this conveyor drops down to 12-ft. elevation during a 3-minute cool-down period until it enters the loop of the electrostatic spray zone. This loop is 66-in. in diameter and the parts are hung from either simple "S" hooks or, in the case of some small parts, on special "Christmas-tree" type workholders so that the work is about 18-in. below the rotators. Rotators are located at every 6-in. along the conveyor so that hanging centers with any multiple of 6-in. can be used. With this arrangement the 8-ft. long pieces are about 18-in. above the floor.



A close-up of the electrostatic painting zone where 4-ft. louvers are being painted electrostatically as they rotate while moving around the No. 2 Process reciprocating disc. They hang on 18-in. centers.

How the Electrostatic Disc Applicator Works

The 25-in. applicator disc, which rotates at 900-rpm., moves up and down in the center of the loop at a speed of about 12-in. per second. The parts to be painted rotate about two revolutions per foot of conveyor travel so that all sides are exposed to the electrostatic spray. Paint metered through a variable speed gear pump is delivered by a ½-in. O.D. plastic hose through the inside of the disc rotating motor shaft, and is introduced continually and uniformly to the outer

Admiral Corporation chooses BARCOLOID

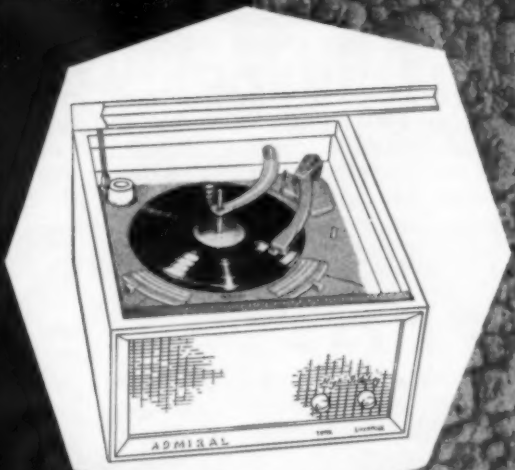
POLYCHROME METALLIC FINISH

– for pattern consistency

– ease of application

– durability

– scratch resistance



After testing many types of finishes for its High Fidelity Phonograph 4C26, Admiral Corporation chose BARCOLOID Polychrome Metallic Finish supplied by Barrett Varnish Company, Cicero, Illinois. Admiral found that BARCOLOID met all requirements for scratch resistance, durability, pattern consistency and easy application in high production. Moreover, Admiral reports favorable sales reaction and minimum fading in using this finish.

BARCOLOID is a one coat, hammer tone finish pigmented with ALCOA Aluminum. It is available in 25 standard colors, can be baked or air dried. BARCOLOID data sheets and color booklets are available on request from the Barrett Varnish Company.

Paint manufacturers, working with ALCOA Pigments, have developed a rainbow of dazzling Polychrome Finishes that are building big sales for a wide variety of products. These finishes cost no more than ordinary coatings, and they save money on surface preparation as well.

Get the facts from your paint manufacturer, or write ALUMINUM COMPANY OF AMERICA, 1732-E Alcoa Building, Pittsburgh 19, Pennsylvania.

ALCOA ALUMINUM

ALUMINUM COMPANY OF AMERICA

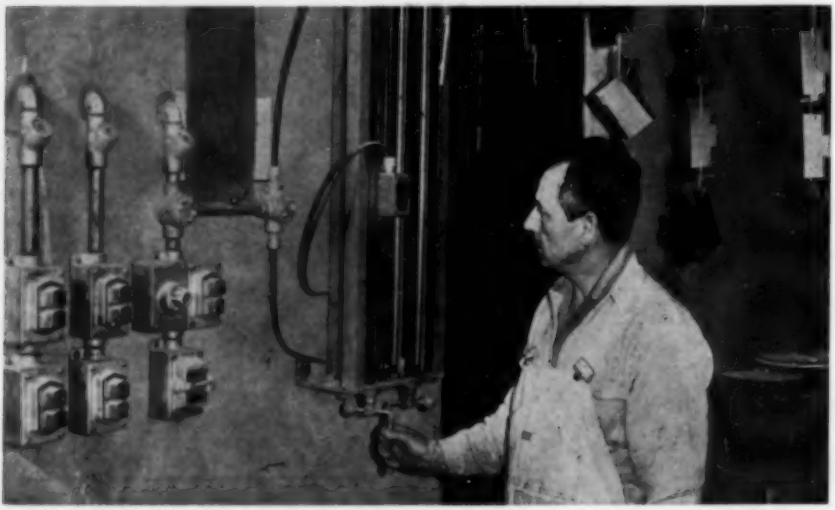
edge of the rotating disc on the under side of the disc. The disc itself is charged to about 90,000 volts of direct current. Because of the strong electrostatic field existing between the disc and the work, the paint is caused to atomize into a mist and each paint particle has a strong negative surface charge. The work being of opposite polarity attracts the paint, thereby eliminating the usual overspray and causing a uniform automatic deposition of paint.

Easily Adjustable for Different Sizes and Colors

When shorter pieces are run through the line, the stroke length of the disc is adjusted by means of limit switches which are mounted on lead screws. This is done without stopping the conveyor line. Color changes are made by lifting the paint suction hose out of one barrel and putting it into another. A gap of 25-ft. is left in the line and the conveyor is not stopped. The enamel used is a modified alkyd with high reflectance. For the electrostatic spray this enamel is reduced in the ratio of 5 of paint to 3 of thinner, to a viscosity of 17 seconds as measured with a Zahn No. 2 cup.

Paint Heater Is Used to "Stabilize Temperature"

A non-circulating paint heater is used between the metering pump and the disc to help stabilize morning and afternoon temperatures. The temperature of the paint on the disc remains at about 90° F. In this way, it is not necessary to make solvent adjustments at all during the day. Paint delivery adjustments are made as needed by

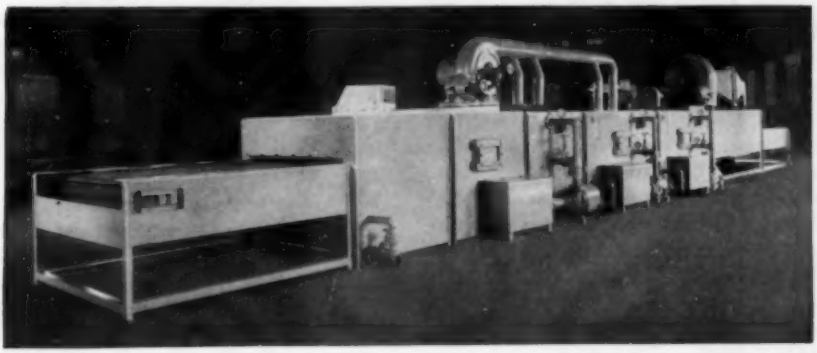


John Blanco, finishing foreman, making adjustment on stroke of reciprocator. Push buttons, which control the conveyor, ventilating fan and electrostatic equipment, are shown at left.

HOW THIS NEW A-F

ENGINEERED MACHINE

washes both Aluminum and Steel Sheets "CHEMICALLY CLEAN"



To get aluminum and steel sheets, covered with mill oil and shop dirt, "chemically clean" and thoroughly dry for the perfect plywood-to-metal bond required by a manufacturer of decorative panels, A-F Engineers shop-tested a method for over 30 days to find the exact cleaning solution that, coupled with the A-F *Super Spray* Cleaning and Rinsing action, would remove all traces of oil and dirt—then designed and built this special wash-rinse-dry machine. The super-heated air used in the drying phase is filtered to keep it dust and dirt free. Since installation, this machine has more than filled the panel manufacturer's requirements.

Perhaps you have a troublesome metal products cleaning and finishing problem. A-F Engineers can help you solve it. Write for new FREE 28 page folder today.

ALVEY-FERGUSON

Engineered CLEANING and PROCESSING MACHINES

A-F EST. 1901

THE ALVEY-FERGUSON COMPANY

737 Disney Street CINCINNATI 9, OHIO

West Coast Plant: 760 N. Georgia St., Azusa, Cal.

simply turning a handle, thereby changing the speed of metering pump. Insofar as possible, parts are hung so as to present the same square feet per minute, thereby making a paint delivery change unnecessary. Many times you will see the fixtures being finished automatically, unobserved and unattended, from the load-on to take-off stations.

Some Parts Receive a Follow-up Touch-up

After traveling through the electrostatic zone, parts pass in front of a 12-ft. water-wash touch-up booth where two men operate when required. Certain pieces that have shielded, or recessed areas require hand spraying to complete the coverage. This is done at an upper and lower level. When touch-up spraying is not required, these two spray men help load small parts or do other work.

The electrostatic equipment is operated by a finishing foreman who also supervises the loading, cleaning and baking operations. Although hand touch-up spraying is used on only about half of the pieces painted—and then only a small area is touched up—the paint usage by hand and by the electrostatic method is nearly the same, together totaling about one-third the former hand spray usage of 180 gallons daily.

Electrostatic Spraying Permits Faster Conveyor Speed

We found, too, that it was possible to do about 10% more work on our one shift with the new setup than we formerly did in two shifts. This is possible because of a 50% increase in conveyor line speed, together with closer hanging of parts, and the ability to coat everything perfectly the first time.

After being painted the parts pass through a flash-off zone and into an oven where they are baked for 12 minutes at 300° F. This oven has entrance and exit air curtains surrounding the oven openings so that practically no heat is lost to the room. After baking and cool down, the conveyor passes by the unloading station which is at the head of the assembly line. The conveyor travels empty from this point to the loading station, a distance of about 75-ft.

A smooth flow of finished goods is obtained by taking in raw materials at the rear of the building, where both a railway spur and truck facilities are provided, and moving parts forward through fabricating, finishing and assembly to the front of the building where they are shipped out by conveyors onto trucks. Twelve to fifteen tons of steel per day are handled smoothly and efficiently in producing our daily requirements of quality fluorescent fixtures.

Author's Note: Companies whose assistance we are indebted to for what is in this story, include the following: Ransburg Electro-Coating Corp.; Miller Brothers Co.; Aladdin Heating Corp.; Richards-Wilcox Mfg. Co.; Oakite Products Co.; and Pacific Paint & Varnish Co.

EDITOR'S NOTE: Fluorescent Fixtures of Calif. shows a spectacular record of growth and achievement over the 11 years it has been in business. It was started by Mr. Ernest O. Anders in 1944.

ONE IDEA

can mean the difference between

PROFIT or LOSS!

One Idea seen at the 1955 Industrial Finishing Exposition and 42nd Annual Convention of the American Electroplaters' Society may save your company thousands of dollars. It can mean the difference between profit or loss.

THE ONLY SHOW IN 3 YEARS! Don't miss this big opportunity for a mutual exchange of ideas, plus a chance to see and talk to all the people who have contributed engineering advancements, research and know-how to the fast changing industrial finishing industry.

1001 IDEAS FOR BETTER FINISHING!

For information, write:
Harold E. Bartlett, Exposition Manager
1955 INDUSTRIAL FINISHING EXPOSITION
c/o American Decorating Co.
1849 West 24th Street, Cleveland 13, Ohio

It is important to KEEP UP TO DATE!
PLAN NOW TO ATTEND...

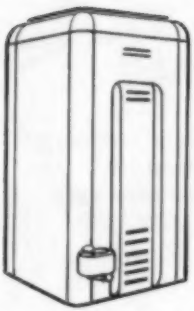
1955 INDUSTRIAL FINISHING EXPOSITION
in conjunction with the
42nd ANNUAL CONVENTION OF THE AMERICAN ELECTROPLATERS' SOCIETY

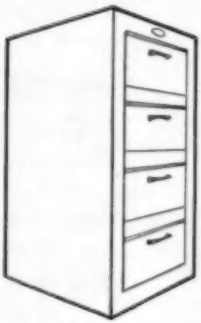
June 20, 21, 22, 23, 1955—PUBLIC AUDITORIUM, CLEVELAND, OHIO

Speed your production as this

with new DUOTONE

by Lowe Brothers





A large manufacturer of theater seats wanted to step-up production of seat backs by eliminating back-tracking and double-handling in the finishing process. Lowe Brothers "Finishing Specialists" developed an amazingly fast spraying, solid covering (one coat!), quick setting enamel for his product. Besides greatly speeding the flow of finished parts, this sensational new finish—*Duotone Enamel*—provided the best looking, longest wearing, most economical finish this manufacturer had ever used!

New *Duotone* Enamel is the ideal finish for a broad range of sheet metal products. It gives maximum beauty and wearability, yet keeps finishing costs at a minimum! ⇨ ⇨ ⇨

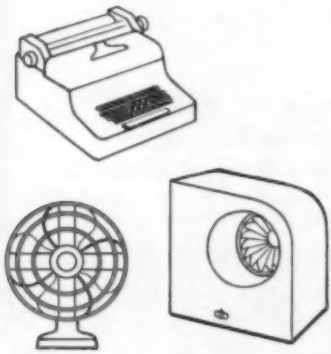
This advertisement is based on facts from Lowe Brothers Case History files.

ENGINEERED QUALITY

manufacturer did...

ENAMEL

Extremely fast baking! Amazingly tough!



Check these important Duotone Enamel features • Dries in 15 minutes at 300° in a conventional oven—and in 8 minutes under infra-red! No orange peel! • Available in any degree of gloss—wide color choice. • It's a modified alkyd resin type enamel. • Sets a new standard for wearability! Practically impossible to mar or scratch! • Resists perspiration and skin oils. • *Duotone* keeps material cost to a minimum! Just one coat (only ½ mil thick) covers bare metal surfaces perfectly with an adequate protective film . . . *Duotone may save you plenty in 1955! You pay nothing to find out. Write today for the full story.*

The Lowe Brothers Company • Dayton 2, Ohio • Industrial Division

District Offices: Atlanta • Boston • Dallas
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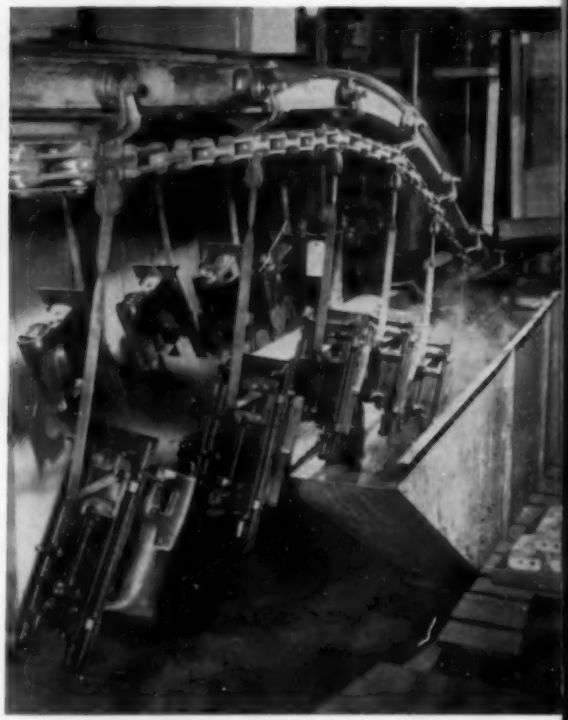
LOWE Brothers

FINISHES FOR INDUSTRY SINCE 1870



Sewing machine heads suspended from overhead conveyor, entering the hot alkali cleaning solution.

BY RAY ZIZKA
Finishing Foreman for
White Sewing Machine Co.

Baked Wrinkle Enamel on Sewing Machine Heads

AS A GENERAL RULE, sewing machines remain in useful service many more years than an automobile or most of the home appliances. Consequently the finish for the heads and cabinets must be designed and put on for long use. For standard machines the heads are cast iron, but magnesium and aluminum heads are used on portable machines where weight is a factor. All small component parts are made of aluminum.

Because we are dealing with both ferrous and non-ferrous metals it is necessary to use two separate methods of cleaning and preparing the metal surfaces before any protective coatings are applied to them.

Cast Iron Heads; Cleaning Oven Drying; Cool Off

Cast iron heads are hung to an overhead monorail conveyor which travels at a speed of 7.2-ft. per minute; hangers are on 24-in. centers.

[PAGE 40]

The work passes through a tank containing an alkali cleaning solution which is kept at a temperature of 200° F. The cast iron heads are immersed in this solution for two minutes. Next they pass through a hot water rinse which is maintained at a temperature of 180° F.

Excess moisture is blown off the parts with compressed air before the heads enter an infrared electric dry-off oven through which they travel for five minutes in a heat of 300° F.

Because of the bulk of the cast metal in sewing machine heads and the relatively high temperature maintained in the dry-off oven, it is necessary to pull down the retained heat of these metal parts before any coating operations begin. This cooling off of the parts occurs as they travel through a cooling tunnel for five minutes. Air in the tunnel is recirculated and heat is removed through an exhaust system. The cast iron heads remain on the conveyor to travel to the spray booths.

Magnesium and Aluminum; Clean; Oven Dry; Cool-off

Aluminum heads are put through a soap wash at 180° F. for two minutes; this is followed by a cold water rinse; then a hot water rinse at 212° F. Next comes a nitric acid bath of 30 seconds duration. This latter solution is made up in the proportion of 12-gallons of nitric

Operator removes machine heads from conveyor, sprays them with wrinkle enamel, then places them on tiered truck for air dry. Later the finish is baked to form the wrinkle pattern.

acid, 100-lbs. sodium bichromate to 100-gallons of water. Next these light metal heads are rinsed in cold water, then in hot water at 180° F. They are blown dry with compressed air before they enter the infrared electric dry-off oven. After their trip through the dry-off oven, these heads also pass through the cooling tunnel.

Small Parts Handled in Wire Mesh Baskets

Small aluminum parts are placed in wire mesh baskets and immersed for two minutes in a mild alkali cleaner maintained at a temperature of 120° F. This treatment is followed by a cold water rinse and then a hot water rinse at 212° F. A small amount of alkali is added to the final hot water rinse to slightly etch the aluminum surfaces. While still in the baskets, these parts are moved into a batch-type dry-off oven for 30 minutes at 400° F. Upon removal they are allowed to cool to room temperature and are then placed on wire screens before being transferred to the spray booths for coating.

Small aluminum parts in wire mesh baskets are hand dipped in the cleaning solution.

For many years black was the accepted color for all sewing machine heads but, just as is the case with so many other products, color has been added. Now, in addition to black, we use brown, blue, green and gray.

All of our wrinkle enamel is formulated to produce a very fine pattern. We buy our wrinkle enamel from one supplier who knows and meets our finish specifications. We get excellent uniformity in the material. We follow the same procedure in our metal cleaning, spraying, timing and baking day after day, therefore the quality characteristics of our finish is the same today as it was a year ago today.

Spraying Wrinkle Enamel; Baking at 300° F.

We use our wrinkle enamel at a viscosity of 21 seconds at 78° F., as measured in a No. 3 Zahn cup. Atomizing pressure is 70-lbs., and fluid pressure is 7-lbs.

After being spray coated, the heads are placed on tiered trucks to air dry for 50 minutes. Then the loaded trucks are moved into batch type, electric strip heated ovens where the wrinkle finish is baked for two hours at 300° F.

Aluminum sewing machine heads, after having been cleaned, are moved by conveyor to the spray

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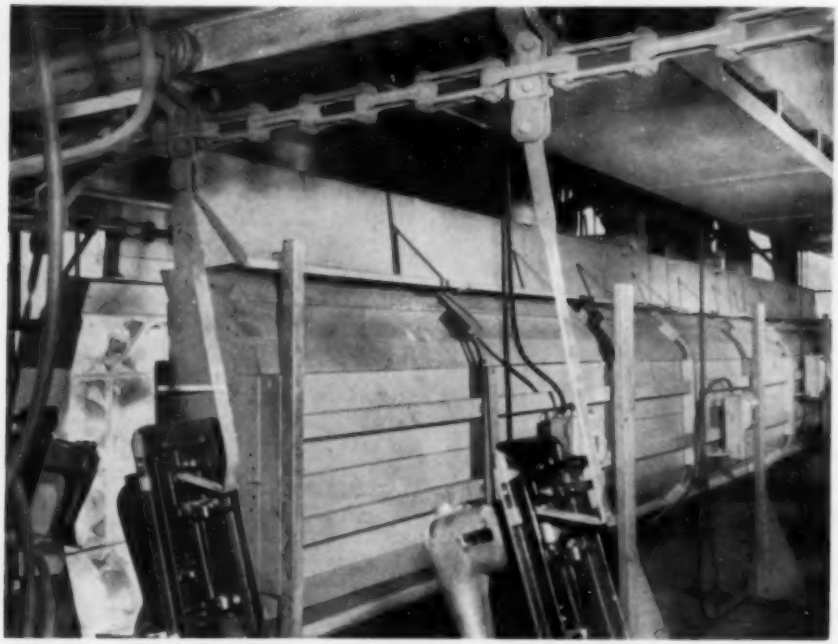

Sewing machine heads entering infrared electric dry-off oven.

booths where they are given a semi-gloss black enamel prime coat. They are then mounted on tiered trucks to go into the batch-type ovens where the primer coat is baked for one hour at 300° F. After a cool-off period, these heads are returned to the spray booths for a spray coat of wrinkle enamel; then they follow exactly the same procedure as the cast iron heads. Cast iron heads are also prime coated and baked before application of the wrinkle finish.

Small aluminum parts are not prime coated; the clean dry parts are placed on wire screens and sprayed with wrinkle enamel. Then the loaded screens are placed on tiered trucks and moved into the oven where the finish is baked for two hours at 300° F.

Upon removel from the ovens, all finished heads and small parts are allowed to cool for 30 minutes. Then they are inspected and placed on an overhead conveyor which delivers them to assembly lines.

Mitchell-Bradford Chemical Co. Occupies New Plant

Mitchell-Bradford Chemical Co., manufacturer of Black Magic blackening processes for ferrous and non-ferrous metals, metal cleaners, rust preventives and plating specialties, announces the completion of a new modern plant to accommodate increased production, larger offices and research facilities.

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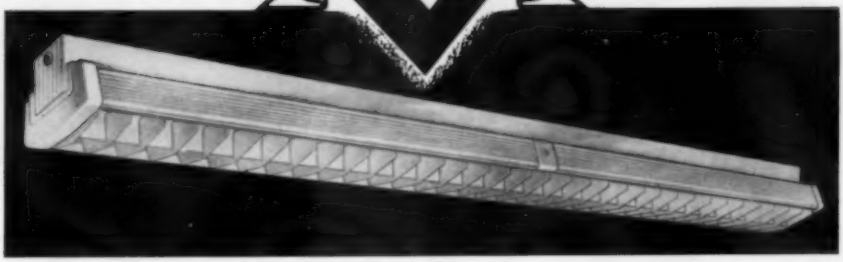

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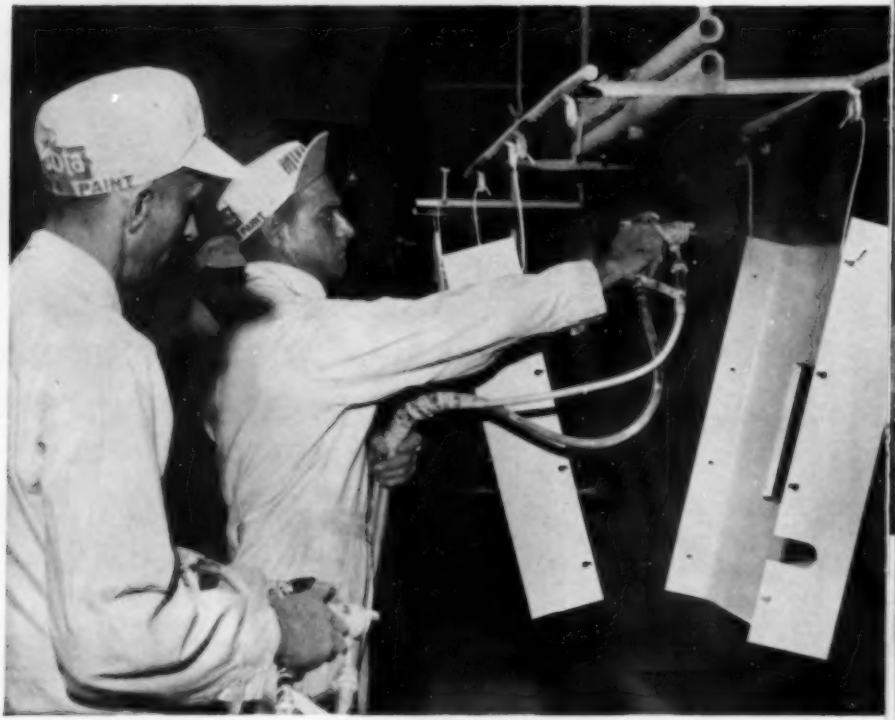
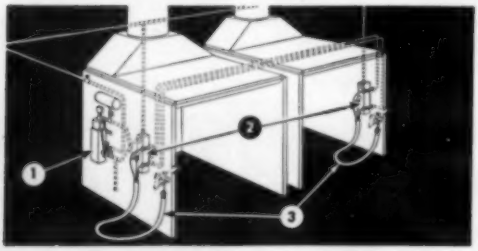
DeVilbiss hot-spray system



McCray paint-line operators like the DeVilbiss system because it makes the paint spray the same, cover the same regardless of room temperature or weather conditions.



DeVilbiss hot-spray system is foolproof; adapts to multiple gun hook-ups. Hot water from master heater (1) heats paint in exchangers (2); heat-jacketed hose assemblies (3) keep paint hot right up to guns, assuring uniform viscosity at all times at each gun.

SPRAY GUNS • AIR COMPRESSORS • HOSE AND HOSE CONNECTIONS

has cut rejects at McCray Refrigerator Company

Familiar problem: Rejects had been slowing production and causing costly refinishing at the McCray Refrigerator Company, Kendallville, Indiana. The hot-spray equipment McCray had been using failed to maintain the precise pressure, temperature, and viscosity control necessary in the application of enamel paint.

Cost-saving solution: McCray took its problem to DeVilbiss. The result: DeVilbiss' hot-spray system has cut rejects; reduced air and fluid pressures; and keeps temperature and viscosity constant, providing flawless coverage. Production, now running a full 8-hour day without a break, has increased.

Because of accurate temperature control *right up to the gun*, McCray has realized big savings. Less solvent is used in the paint. What's more, the simple operation of the DeVilbiss system has made the enameling job easier; cut maintenance costs substantially.

What to do: Let a DeVilbiss representative show you how *you* can improve your finishing operations. The standard components of DeVilbiss' paint-heating system can be combined in countless ways . . . to meet your special needs.

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Spray Problems With HOT LACQUERS

BY HENRY G. KNAF
Professional Engineer, Titanine, Inc.

INASMUCH as the use of hot lacquers is becoming more widespread every day, discussion of some spray problems encountered with hot lacquers may be of interest to the makers as well as users of such lacquers. This discussion is confined to lacquers, because the hot spraying of synthetics offers considerably less difficulty than that of lacquers.

Range of Solids and Viscosities of Hot Lacquer

About 60 different lacquers were made available to the writer, offered by a number of suppliers for hot spray, and most of them were in actual use. The solids contents of these lacquers range from 26% to 37%, while the viscosities, measured cold, run from .8 to 5 poises*. Most of the lacquers had solids between 29% and 32%, with viscosities ranging from 1 to 2.5 poises. Conventional cold lacquers, ready to spray, run from 22% to 25% solids, and their viscosities range from 40 to 70 centipoises.

*Poise is a measure of viscosity denoting the time it takes for 50cc to flow through the opening of an ASTM cup (Gardner). By means of a conversion table, poise values can be easily converted into terms of Zahn or Ford cups. A poise equals 100 centipoises.

Principles of Hot Spray; More to it Than Heat

As is well known, the use or application of heat reduces the viscosities of hot spray lacquers from one-third to one-fifth of their "cold" viscosities, thus bringing them into the range of spray viscosities of conventional cold lacquers. However, spray viscosity alone does not tell the whole story. If it did, all that would have to be done would be to leave out a part of the solvents thereby raising the solids of the lacquer, then heat it to 160° F. to lower the viscosity and spray it. What would happen is that a major portion of the fast solvents would be evaporated by the heat, resulting in an extremely dry spray without flow-out.

Hot lacquers must be designed with a considerable portion of high boilers or slow solvents, sufficient to make flow-out possible, because much of the fast solvent mixture is being "burnt out" by the heat. This selective process of burning out part of the solvents makes it possible to lay on heavier films with hot lacquers than with conventional cold lacquers.

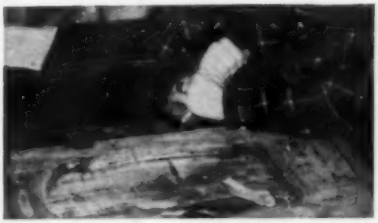
Measuring the viscosities of hot and cold lacquers after they have

ROLLING BILLBOARDS

Truck trailers can be back on the highway within eight hours when fast-drying lacquer is used for multi-colored finishes. With other coating materials, a day of drying is required for each color. Typical of Hercules service was a demonstration of lacquer's advantages recently made for a large midwest trailer manufacturer.

COLORFUL PLAYTHINGS

Lacquer for plastics makes it possible to achieve multi-colored effects on single molded units. Lacquer not only speeds production with its quick drying but cuts cost by permitting the use of more economical plastic materials.



REFINISHING MADE EASY

Paint removing before refinishing operations begin is made easier by the addition to paint removers of less than 1 per cent high viscosity ethyl cellulose or cellulose acetate. The addition of these ingredients thickens the paint remover and makes it more manageable.

For further technical or marketing information on these or any other developments in lacquer-type coatings made from nitrocellulose, ethyl cellulose, cellulose acetate, or Parlon® (chlorinated rubber), write to:

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CL55-2

reached the surface will demonstrate this. A hot lacquer with 32% solids and a hot viscosity of 50 centipoises reached a viscosity of ten poises after the spray out, a twenty-fold increase. On the other hand, a 27% solids cold lacquer having a viscosity of 70 centipoises showed 2.1 poises after the spray out, or only a three-fold increase.*

This is the fundamental principle of hot lacquer spraying which makes it possible, for instance, to spray a double film thickness on a vertical surface with a 27% solids hot lacquer, as compared with a cold lacquer of the same solids content.

"Burning Out" Part of The Fast Solvents

The "burning out" of a portion of the fast solvents in hot spraying has other implications. It is often thought that by raising the temperatures at the gun a lacquer tending toward dry spray can be brought to flow out better. This, on the surface seems logical, because according to the book the viscosity is lowered by raising the temperature. However, at 160° F., raising of the temperature lowers the viscosity only little, while the rate of solvent expulsion is increased substantially, resulting actually in a drier spray-out.

The same thing happens when, as has been done in the earlier days of hot spraying, the atomization air is heated. This heating of the atomization air only helps to "burn out" more solvents and tends to dry out the lacquer. The practice is completely abandoned today.

Solvent Mixtures and Resins Affect Solvent Expulsion

Solvent expulsion is different with different lacquers, not only because solvent mixtures may differ, but it has been found that some resins, like maleics for instance, have a greater tendency to expel solvents than others with the same solvent mixture. Such lacquers will spray drier and will not flow out as well.

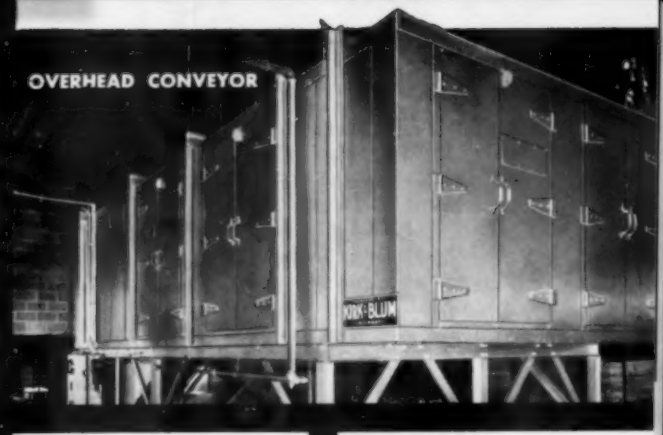
With such more volatile lacquers or in general with low solids, low viscosity lacquers gasification may already take place inside of heating units when the pumping system needed to circulate the lacquer is used to suck in new lacquer directly out of the container. Negative pressures exist in the return hose near the pump, leading to throwout of solvents.

These solvent gases will form an emulsion with the lacquer which, when it reaches the gun, will result in sputtering and will give an uneven spray-out. In these cases it is advisable to use a pressure pot to bring in new material. This imposes an even pressure on the circulating system and will prevent gasing. Such troubles of course, are not encountered with heating units which do not employ circulation at all and which rely on pressure pots to bring the material to the gun.

By speed of spraying here is meant not the speed of the spray stroke in feet per second, but the area which can be covered with a

*The lacquers were sprayed into a metal sheet folded like a partially open book so that they flowed into a container at the bottom of the crack. Spray distance and fan width were kept constant.

ELT CONVEYOR



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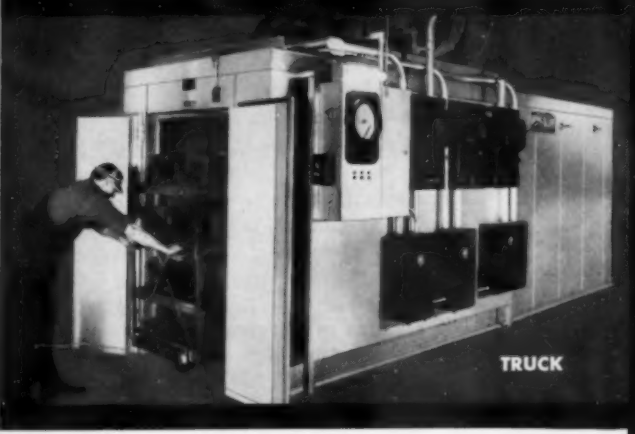

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given film thickness in a unit of time. This depends primarily on the volume of lacquer passing through the gun in a unit of time. This is called the flow rate of the lacquer and is conveniently expressed in pints per minute. It can be measured by shutting off the atomization air and bleeding the lacquer into a measuring glass.

The Speed of Spraying; Flow Rate of Lacquer

Many operators talk in terms of pot pressure when they want to express flow rate. However, this is meaningless, since a number of other factors enter the picture, such as the size of the opening in the liquid nozzle, the length and inside diameter of the material hose, and the viscosity of the lacquer. Flow rates, as clocked in over 300 factories, were found to vary over an extremely wide range, namely from one-half to three pints per minute.

The flow rate in any shop will naturally depend, to a large degree, on the size and shape of the object being sprayed. Picture frames and chairs for instance will not permit the fast flow rates that are possible with television sets, caskets and office desks. But it is not unusual to find differences of 100% or more in the flow rates employed in shops making the same articles.

Usually the higher flow rates are found in shops where either piece rates are paid for spraying or shops with conveyor systems. How important flow rates become in the spraying of hot lacquers will be discussed later.

Film Thickness; Drying Time; Strength; C. C. Resistance

As the struggle for economy in finishing operations is being intensified from year to year, more attention is being paid to film thicknesses. The trend is toward minimum film thicknesses compatible with sales appeal, not only for the sake of reducing costs but also in the interest of drying time, film strength and cold check resistance.

The progressive shop of today knows what film thickness it is laying on. On the other hand, there are hundreds of shops which do not bother about film thickness, as long as they get good results.

To the hot lacquer demonstrator, knowledge of film thickness will often spell the difference between success and failure. By film thickness here is meant the total thickness of the lacquer film, regardless of the number of coats, not including wash coats, glazing coats, coats of toners and sealers. Based on several hundred measurements, lacquer films in the wood and metal industry were found to range from one-half mil to 4 mils, depending on the type of wood and finish.

Suggested Methods of Measuring Film Thickness

Dry films can be measured by spraying over pieces of glazed paper attached to objects to be sprayed. Glazed paper is used to prevent absorption of the lacquer. A paper thickness of 3 mils is preferable. The thickness of the well dried film is obtained by subtracting from the film plus paper the thickness of the latter. Measurement is by use of an accurate mi-

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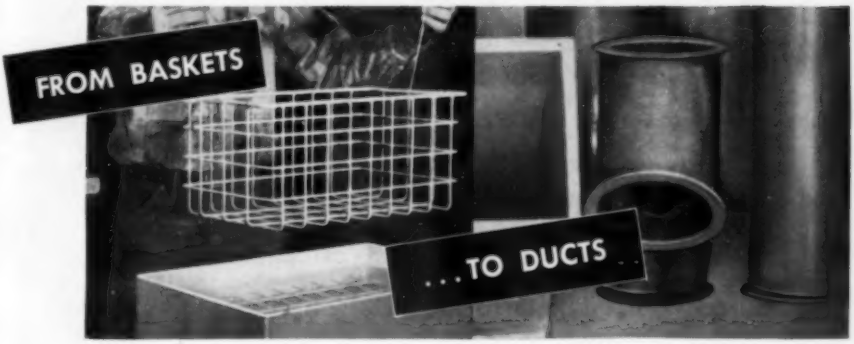

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crometer. Metal foils may be used instead of paper. With these a magnetic film thickness meter can be used instead of a micrometer.

A bridge-type micrometer is also used sometimes after a tiny circle of lacquer film has been removed by applying the open end of a small vial filled with a strong solvent to the surface. The bridge micrometer whose legs stand on the untouched surface measures the depth of the "hole". However, the solvent eats away not only the sealer but sometimes into the substrate and is known to overstate the film thickness.

Whatever the method, an attempt must be made to get at the film thickness. With small objects like picture frames or T-squares, paper can be attached easily because spoilage of a few pieces does not matter. However, with larger pieces, in order not to spoil them, spots must be sought out which permit application of a few square inches of paper without spoiling the piece. For instance, on a casket the paper may be applied to the side where later a handle is going to cover the spot. With desks, one of several drawer fronts can be covered with paper to get the film. Also a television cabinet top can be covered with paper completely, as long as care is being taken that the spray time is the same as on tops without paper.

To Calculate Film Thickness When it Cannot be Measured

Because it proved sometimes difficult to measure film thickness in practice, a method has been developed to calculate film thickness, using three main factors which together govern it. Films are proportional to the solids content of the lacquer, its flow rate and the spray time for any given area.

A formula was developed from hundreds of film measurements on paper under actual operating conditions. In order to simplify matters all spray times that had been clocked are adjusted to an area of 10-sq. ft. An equation was then set up wherein lacquer solids S are expressed in decimals (.3 for 30%), flow rate F in pints per minute, spray time T in tenths of a minute (.33 minutes for 20 seconds) adjusted for 10-sq. ft., and finally film thickness M in mils.

The formula looks like this: SxFxTxC=M. The only unknown element is the constant C which was determined by hundreds of tests in shops and laboratories where films could be measured on paper. This constant, which was found to vary with the size of the object, is an expression of the amount of overspray. It was found that with areas between 5 and 15-sq.ft. it centers around 7. For areas below 5-ft. it fell to 6 and lower, and for areas over 15-ft. it rose to 8 and over.

Example: The top of a cedar chest is to be sprayed. Lacquer solids are 35%; flow rate is 1.4 pints per minute; spray time for the 8-sq.ft. area is 18 seconds or .3 minutes; adjusted for 10-sq.ft. it was .375 minutes and the constant used was 7. The product is as follows: .35x1.4x.375x7=1.3 mils. The calculated film was within a few percent of the actual measured film. The film was measured by cov-

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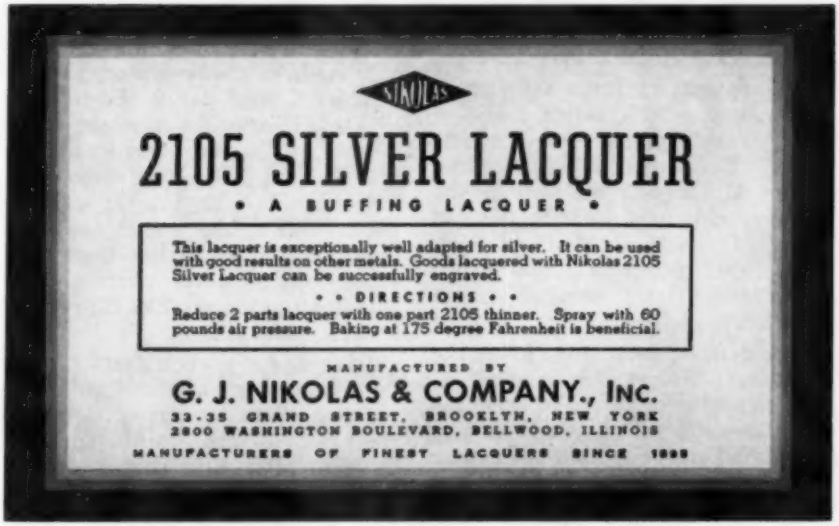
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ering the whole top of the chest with paper and running it through the conveyor system.

Control of Film Thickness

After we find out, either by measurement or by calculation, the film thickness of a cold lacquer system used in a given shop, how can we control the film we are going to put on with our lacquer? Let us illustrate by an actual case.

A shop making large show cases was using a 20% solids cold lacquer. They applied three double coats of ½-mils each, totalling 3-mils. By use of hot lacquer the three operations were to be reduced to two. It would not do to just ask the sprayer to put on 3-mils in two operations. Here, another factor enters the picture.

The demonstrator must know the characteristics of his lacquer as will be discussed later. In this case a 30% solids hot lacquer of one poise viscosity was chosen because this lacquer was known to allow a film thickness of one mil on vertical surfaces. The system used was to spray a single coat at the first operation and for the second operation a double coat with a 2-hour dry in between. A 3-mil film was the result.

The sprayer, who wanted to spray two double coats of hot lacquer was allowed to do so on one piece. The film was measured by paper attached to a spot on a drawer front to be covered later by a handle. It was over 4-mils. This would have led to an excessive lacquer consumption and would have seriously jeopardized the economy of hot lacquer.

Maximum and Minimum Film Thickness

Know your hot lacquers before you take them out. Answer these questions: How heavy a film can be sprayed on a vertical surface before sagging? How thin a film can be sprayed and still be wet or continuous?

To test maximum film thickness on a vertical surface, paper spray-outs made in the laboratory are advisable. Glazed paper sheets of 4 to 6-sq.ft. area mounted on cardboards will be very practical. With half a dozen or so such spray-outs, a lacquer can be put through its paces. On glazed paper the sag-point is reached earlier than on a sealer-coated wood surface, but this is all to the good as it provides a safety margin.

Of course in such tests of sag points, the flow rate is of great importance. With extremely slow flow rates heavier films can be sprayed, but flow rates must conform to actual shop practice. Rates in the high production shops today range between 1.5 and 2.5 pints per minute.

After we have tested the upper limit of film thickness, we also must test the lower limit, that is the thinnest possible film. Glazed paper is not advisable here, because thinner films can be sprayed on paper than on wood. However, papers should be attached to the wood panels to measure the minimum wet or continuous film that can be sprayed with a given lacquer. For spraying thin films, lower flow rates of one to 1.5 pints per minute are advisable. [*To page 58*]

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The practical importance of knowing minimum film thickness can be illustrated with the following case. A cheap maple desk was to be sprayed with 1.5 mils on the top, 1-mil on the front and ¾-mils on the sides and drawer interiors. A lacquer with a minimum film thickness of 1-mil would obviously not be suited for the job. It would show up the hot lacquer in a very unfavorable light economy-wise.

Lacquers of Different Viscosities Needed

It is obvious that there is no one hot lacquer that can satisfy all of the requirements encountered in different shops. Lacquers that give very heavy films will not give very thin films. The hot lacquer formulator will have to provide the demonstrator with a number of lacquers of different viscosities to meet all possible conditions. It is well to have at least three viscosities available, let us say, one, two and three poises. This can be easily achieved without interfering with solids content by using ¼-second, ½-second or even slower cottons.

Flow Rates of Hot Lacquers And "Bubbling"

The most important of the spray characteristics of hot lacquers is maximum flow rate. Of the 60 hot lacquers mentioned previously, only 10% permitted flow rates of two pints per minute and over. All others when pushed to such rates tended to "bubble."

"Bubbling", or gasing as some call it, is the trapping of solvent gases and air bubbles in the film. The lacquer is setting too fast and thus prevents the gases from escaping, with the result that when the finish is rubbed, pinholes or craters show up and mar the film. This tendency of hot lacquer to bubble is its greatest enemy and has led to many failures. How can this danger be met?

The problem is not a simple one. Addition of more slow solvents is apt to have detrimental effects, as it causes slower drying, printing and tacky surfaces. It is the chemist's job to produce a lacquer with a minimum tendency to bubbling, but it is up to the demonstrator to "know" his lacquer. He must know under what conditions bubbles are most likely to occur. Any operator will know that high summer temperatures, drafts from open windows or doors, slow stroking or "dragging" the gun will all tend to promote bubbling. But beyond all this there is a fundamental relationship between bubbling, film thickness and flow rates.

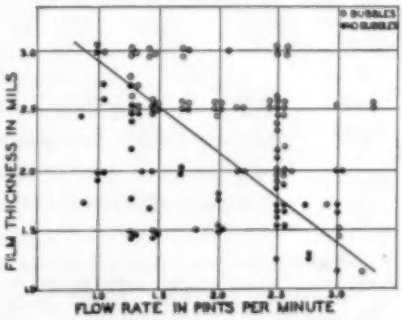

Chart to show bubbling characteristics.

In an attempt to track down this bubbling evil, hundreds of spray-outs were made on paper with a family of hot lacquers ranging in

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* *Studebaker also uses the Ransburg method to apply a heavier and more uniform primer surfacer on automobile bodies.*

In addition to getting better, more uniform coverage with the asphalt-type coating, paint and labor costs were cut 70¢ per chassis. In eliminating the former set-up with 2 water wash booths and 12 automatic spray guns, they save nearly 1000 square feet of badly needed floor space.

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solids from 30% to 35% and in viscosities from 1.5 to 3 poises. Gun distance and fan-width were kept constant and care was taken to spray at room temperatures between 70° and 80° F. Different film thicknesses were applied in one operation running from 1 to 3 mils, while flow rates were varied from 1 to 3 pints per minute. The results of these tests are plotted in the accompanying chart. Each dot represents a spray-out with open dots for bubbling and full dots for no bubbling. Film thicknesses are plotted on the left, flow rates at the bottom.

This chart reveals an interesting phenomenon. The slower the flow rate, the thicker the film that can be sprayed without bubbling; and the faster the flow rate the sooner the bubbling will occur. A trend line is drawn in the chart separating the cases with bubbles from those with no bubbles. The line slopes from top left to bottom right. The zone above the line is the danger zone.

Practical Use of the Bubbling Chart

How can such a bubbling chart help the hot lacquer demonstrator? Well, if in any shop it were required to spray at a flow rate of 2.5 pints per minute, he will know he cannot negotiate a film of 2 mils. The chart, in other words, will warn him not to overstep the limits of his lacquer.

An example from actual practice will illustrate this further. A large manufacturer of cedar chests was applying two separate coats of cold lacquer on the chest tops. He had a conveyor line with two spray stations for the two lacquer coats. Each coat measured 1.25 mils with a total film of 2.5 mils. An area of 8-sq.ft. had to be sprayed in 18 seconds because of the conveyor speed.

As the manager had read about hot lacquer and the claims of reducing the number of coats, he wanted to see one hot coat sprayed instead of two cold coats. What would this have meant? Let us figure it out. The hot lacquer had 35% solids. The 2.5 mil film had to be laid on in exactly 18 seconds. The flow rate calculated by the formula explained previously would have to be 2.8 pints per minute.

But today there is no hot lacquer made that could do this job without bubbling. Then, why not thin the lacquer down to 30% solids? Well, this would have meant an increase in the necessary flow rate to 3.3 pints per minute in order to get on a 2.5 mil film in 18 seconds. And there is no such lacquer either. As a consequence, a 2-coat system had to be resorted to, destroying the biggest advantage of hot spray, namely, the saving of one coat of material. The demands on the lacquer had exceeded its spray limits.

The observations presented in the foregoing can now be summarized. In order to successfully demonstrate and sell hot lacquer, the demonstrator must be familiar first with the film thickness of the cold lacquer system he wants to replace. In order to plan his system intelligently, he must choose a lacquer with the proper characteristics.

He must know the maximum or minimum film the lacquer can give

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and, above all, he must know how far he can push the flow rate without running into bubbling. Finally, he must have at his disposal a number of lacquers with different viscosities to cope with the various demands made upon him.

Prepared in this manner, the demonstrator will be able to show the many advantages of hot lacquer. This may be a reduction in the number of coats as used by multi-coat cold lacquer systems. It may be the laying on of a heavier coat on furniture where a cold single coat system does not give sufficient film thickness. It may be the cutting of spray time with no heavier films required because of the heavier solids of hot lacquers. It may be just the absence of blushing. It may be lower cost per pound of solids, because hot lacquers save thinners.

The field is wide open. With the pressure for economy increasing, shop after shop is going over to hot lacquers. As its application problems are better understood through more scientific analysis, the possibilities for hot lacquer seem unlimited.

Permite Adds Representatives in Southwest and Puerto Rico

Appointment of four additional manufacturers' agents to promote the sale of Permite Aluminum Paints and Permite Spray Enamels in the Southwest and Puerto Rico has been announced.

In the Southwest, new representatives and their territories are: K. J. Shaw Co., Southern California, Southern Nevada and Arizona; The J. E. Thomas Co., entire state of Arkansas; and John G. Wilsey of Wilsey-Southwest, in the states of Texas and Oklahoma.

In Puerto Rico, Permite has appointed Jose P. Velez, San Juan, as agent.

W. F. Sheetz Becomes President of R. C. Mahon Co.

At a meeting of the Board of Directors of The R. C. Mahon Co. at Detroit, Michigan, April 5, 1955, Mr. R. C. Mahon, founder and for 43 years president of the company, was elected Chairman of the Board.

R. C. Mahon and Walter F. Sheetz

Walter F. Sheetz, Executive Vice President and Sales Manager for many years, was elected to succeed Mr. Mahon as president.

Other officers elected at the meeting were Harry J. Lawther, Jr., Secretary-Treasurer; C. L. Chubbuck, First Vice President; R. J. Kraemer, Second Vice-President, Frank J. Bomerscheim, Leston F. Chatfield, W. Henry Duffy, David J. Dugan and Wallace Herdlein were named Vice Presidents.

Glidden Consolidates Offices In Downtown Cleveland

More than an acre of office space in the heart of downtown Cleveland has been leased by The Glidden Co., in a move to integrate the company's home office operations and personnel into one central unit.

The space leased is the entire ninth floor of the Union Commerce Building, 9th & Euclid Ave. Plans have been completed for remodeling the entire space to conform with Glidden's special requirements and the latest techniques in scientific office layout. This may require a period of two years as space becomes available.

In addition to the movement of 125 employees from the office on the 13th floor, 100 members of the paint administration and financial staff will be transferred from the Madison Ave. office to the new quarters.

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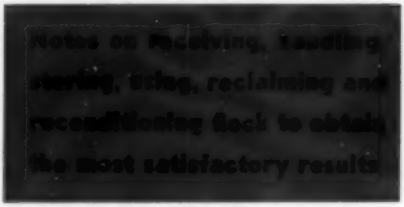
Proper Handling and Storage of FLOCK

BY R. J. STEINFIELD

ONE OF THE most important factors in the use of flock as a coating material, particularly costwise, is the fact that flock covers such a large area per pound. Figures on this vary according to the length and type of flock, but generally speaking, the average coverage for all types is 80 to 100-sq. ft. per pound, and on yard goods, about seven yards per pound (54-in. width).

In order to obtain this coverage, and thereby keep the finishing cost per square foot or unit low, flock must be properly handled, properly recovered, and properly stored before reuse. Here lies one of the major causes of complaint: "We don't get the coverage we should. We lose a lot of flock, and what we reclaim is often not usable".

Reclamation of flock has been covered generally in a previous article. The problem or reuse, however, is closely tied in with the method of handling and storage of fresh as well as reclaimed flock.


Notes on Receiving, Handling
Storing, Using, Reclaiming and
Reconditioning flock to obtain
the most satisfactory results

Protection of New Flock During Shipment and Storage

For most applications, flock is shipped by the manufacturer ready for use. It has the proper finish for the type of application; and the moisture content as well as other characteristics such as static, are properly balanced. One manufacturer ships flock in paper lined weatherproof bags; another in multi-walled paper bags; and others in cardboard cartons.

Due to temperature changes during transportation, it is a good idea, if possible, to allow the flock to remain in its original container, unopened, in the room in which it is to be used, for several days. This allows the contents to reach the same room temperature, and the balance of moisture, etc., to return to its original state when shipped. In some cases, where humidity is closely controlled in the flocking room, it might be advisable to open the containers. In this case, however, care should be taken to eliminate any chance of contamination by dust, etc.

Reclaimed Flock Must Be Kept Dry Too

By following this procedure the initial coverage will be greater, and the condition of the reclaimed flock will be much better, there being less balls, pills, contamination, etc.

If reclaimed flock is to be used immediately, the above suggested procedure will elminate many troubles. However, care should be exercised in the handling of the reclaimed flock. It should be kept absolutely clean, and the flock area should be free from the presence of dripping pipes, leaky valves, dripping conveyors, dust, etc., that can cause contamination.

If the flock is to be stored, it should be returned to its original container and the container should be closed, either by tying the bag, or by sealing the carton. If the flock has been carefully handled while reclaiming, it will be in good condition at a later date for reuse.

Protecting the Original Color of Flock

Returning un-used flock to the original containers, and closing same is particularly important in the case of colored flock. Unless it is dyed to resist fading, flock will fade or change color if left where light can reach it, and what is in the top part of the container will be useless; and if mixed with the remainder, it will change the shade of the whole lot. Where color is of importance, sunfast or vat dyed colors should be used. Even these will fade some, but the amount is much less, and the color will remain true for a much longer period of time.

Often the question is asked, "What is the right way to handle flock when reclaiming it?" The answer is that the men doing the work should wear clean gloves or have clean dry hands, particularly with white or light colored flock. Do not feed flock into a container with a chute or anything else unless the angle of down flow is 85° or more. Anything less will cause excessive rolling, and particularly with long flock, tends to cause "balling" or pilling" by its rolling action.

Handle flock as little as possible with the bare hands. The natural moisture and oil from the skin will cause isolated balls and pills. Also, it is advisable to store the flock in an area that is free from vibration. Contsant vibration will pack the flock in the container, and make it difficult to handle when removing it.

If storage must be in a damp place, spread the flock out to dry before using it. After it is dry, screen it through a 10-mesh screen. This will break up many balls and pills, and those that don't break up can be discarded. If flock is stored in a hopper, any method of keeping a little heat on the hopper walls will keep the flock dry.

Flock Should Average 5% Moisture Content

However, flock that is too dry is as bad as flock that is too wet. When it is too dry, the natural static in the fibers will cause it to "chain" and "clump" together, and make it almost unusable. Generally, flock should have an average of 5% moisture content by weight, with a low of about 2%, and a high of

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about 8%, this can be easily determined by wetting a sample, weighing it, drying it bone dry, and weighing it again. Then wet another sample, and dry it to the desired moisture content, and check the flock to be used by comparing weights.

Reconditioning Reclaimed Flock—When Necessary

Many times flock can be reclaimed by reconditioning it. The contaminated flock usually contains some dirt, balls of adhesive, etc. By screening the flock first through a 10-mesh screen, and then a 20-mesh screen, the most objectionable contaminants will be removed.

Flock, just as any other material, must be handled properly to give the desired results. Clean, freely flowable flock will not only give increased coverage, but will increase production and reduce the number of rejects by giving a better finish, free of spots and contaminants, and allow real continuous production without clogging of spray guns, screens or other equipment.

New Book on Aluminum Paint and Powder

A new book about aluminum paints and powders by real authorities on the subject—J. D. Edwards and Robert I. Wray, both with Aluminum Co. of America—has just been published. It tells you the latest information about the manufacture, testing and various industrial uses of aluminum paints, how and why you use them, etc. Contains 220 pages, 5¾x9-in.; is divided into seven chapters; has 76 illustrations; includes an alphabetical index of subjects; is bound in light blue stiff covers and lettered in silver. Here is a really fine book well printed on high quality paper for present information and future reference. Price, only $4.50. Copies can be obtained through *Industrial Finishing Magazine.*

The Two Words to Remember are

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Sealer Stops Bleeding

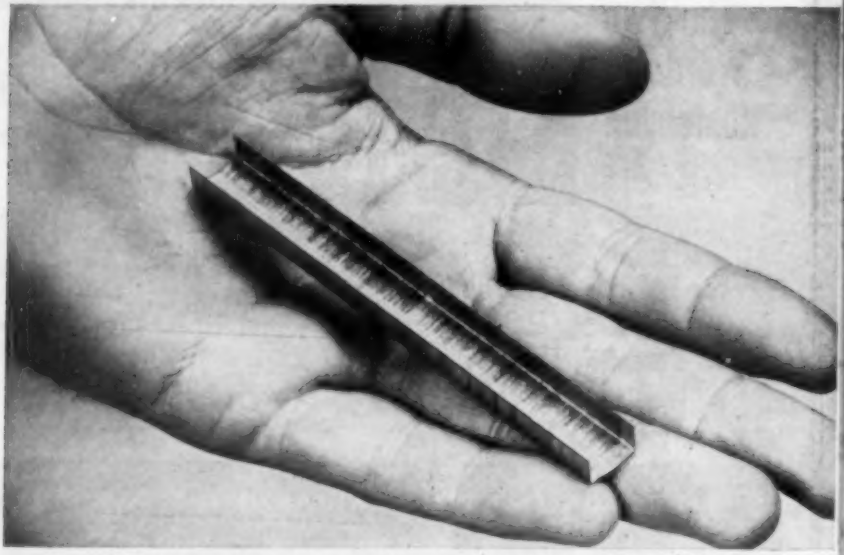
ONE OF THE PROBLEMS that refinishers of furniture have, when they put on a light color lacquer enamel topcoat, is the bleeding of the original finish through the new topcoat. This is particularly true when the original finish has included some red pigment or dark mahogany stain.

Probably one of the easiest and cheapest methods of effectively sealing in these stains and preventing their bleeding through and spoiling a newly applied lacquer enamel coating, is to apply a sealer coat of a good grade of shellac, with some aluminum paste or powder mixed into it. This shellac sealer coat can be applied by spraying, brushing or dipping.

Shellac applied in this manner has the two-fold merit of acting as both a sealer and an effective primer under lacquer or lacquer enamel topcoats. Since shellac has the property of drying to a dust-free surface within a few minutes, only a little time need elapse before the article is ready for topcoating.

For best results, shellac, as purchased in the usual 4-lb. or 5-lb. "cuts", should be thinned to approximately a 1-lb. or 2-lb. "cut". Thus for each gallon of 5-lb. cut material, use two gallons of denatured alcohol. For each gallon of 4-lb. cut shellac, use 1½-gallons of alcohol. This thin shellac, combined with the aluminum powder or paste, should give the desired results. The versatility of shellac can often be utilized to advantage in all types of wood finishing.—*N.I.G.*

Sanding and cleaning your wood surfaces before finishing will help to produce a better finish.



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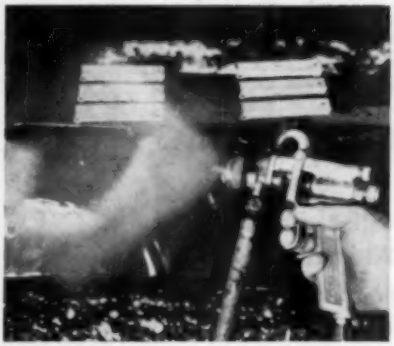
Staple lacquer that knows when to let go

Perhaps you remember when reloading a stapler was a tricky business. Coping with a cartridge of several hundred staples that just wouldn't stick together properly usually resulted in lost time *and* lost staples. The reloads were slow, difficult, and costly to manufacture, too.

Coating the staples with a specially formulated Du Pont DUCO® pyroxylin lacquer cement changed all this. Now staples are held together firmly yet release freely. As a result, today's staplers are in universal demand, performing an ever-increasing variety of services more efficiently and economically.

This success typifies the vital contribution the right application of a tailor-made Du Pont finish makes to the sales future of thousands of products. Perhaps a Du Pont finish can help you develop a new product—improve existing products—boost efficiency. Contact the Du Pont sales technician in your area, or write E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Wilmington, Delaware.



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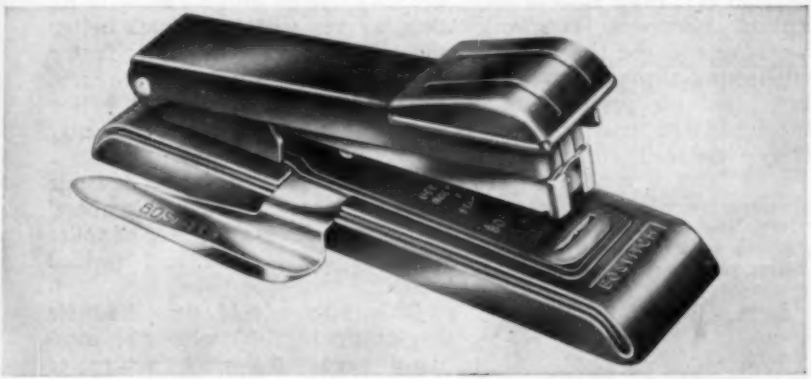
THIS DEVICE helps Du Pont chemists measure and control finish viscosity.



EYE-CATCHING BEAUTY of Du Pont DULUX enamels means added sales appeal for this stapler.

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We Obtained Many Savings by
Spraying Heated Enamel

An interview with Fred E. Mueller, President of The Plumbers Woodwork Co., Algoma, Wisconsin, covering a newly installed paint heating system.

SINCE THE installation of our new paint heating system", asserted Mr. Fred E. Mueller, president of Plumbers Woodwork Co., "we have reduced the amount of paint flowing through our guns by 43.6%; cut air pressure two-thirds; eliminated costly rejects completely; reduced spray booth maintenance by 80%; cut down on wasteful overspray; increased product coverage by 40%; and, with all this, we are getting a much better finished product through faster drying, durability, accurate and dependable viscosity control, better grain-filling coverage and a greatly improved gloss surface".

Paint Supervisor, Harry Seiler, adjusts master heater. Hot water is circulated from here through piping to booths where paint is heated before going to the gun.

Manufactured under the trade name "Badger Brand", Plumbers' products feature a full line of toilet seats in both wood and molded plastic.

This 50-year old firm had its beginning in 1905 when the company began the manufacture of wooden toilet flush tanks with copper lining. Later, as porcelain and china began to replace the wooden products, Plumbers shifted to the specialty of wooden seats and covers, a business that has prospered throughout the years.

In the beginning, painting was accomplished by spraying with gravity feed at each paint station, but four years ago the company installed a pressure system, thereby permitting the central mixing and storage of paint rather than using individual units at each spray

Fred E. Mueller, President
Plumbers Woodwork Company
Algoma, Wisconsin

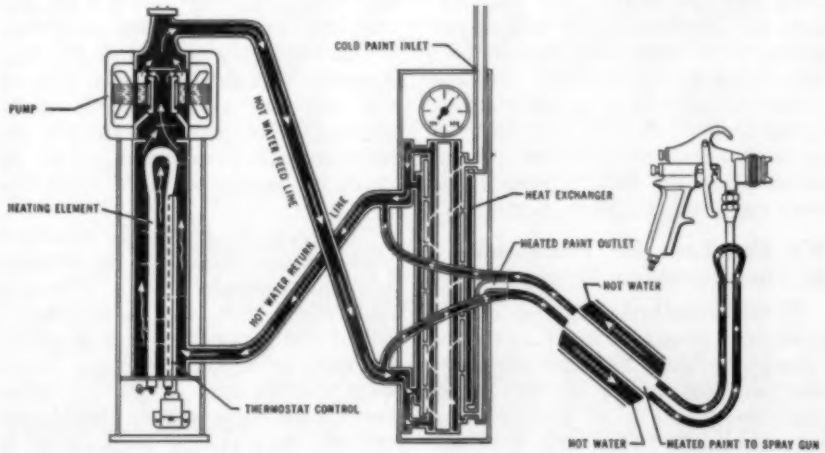
booth. In the latter part of November 1954, the company installed its new paint heating system.

We Became Interested in Hot Spray Painting

"The fact that lower viscosity through heated paint would be the answer to our many paint spraying problems, is not a new thing in this industry", Mr. Mueller continued. "As a matter of fact, we had been seriously thinking in that direction for the past couple of years; however, it had been our belief that a satisfactory method of heated paint application was yet to be developed. When a nearby factory installed, used and highly recommended their new system, we became more interested. On investigation, we concluded that this system had the features that we deemed necessary for satisfactory performance.

We Like the Idea of Heat Following Paint to the Gun

"Actually, by this method of heating paint, circulating heat follows the paint in the hose up to a point close to the spray gun. . . . This new system gives us a worry-free operation because of the principle which provides paint heating



right up to the gun . . . . accurately controlled temperature by constantly circulating hot water for controlled gun-tip viscosity."

In this system water is heated in a compact electric water heater (which can be located anywhere) and circulated through a highly efficient heat exchanger located at the spray station. Paint, under pressure from the circulating system, is heated in the heat exchangers to about 140° F. The paint then flows to the spray gun through a special hose. The hose actually has three passages in it—a center passage carrying the heated paint to the spray gun and two outside passages which circulate hot water through a closed system. This "heat-jacketed hose" is the secret of keeping the paint hot right up to the gun.

"This produces what amounts to automatic control, once the proper temperature, pressure and viscosity are determined. Because we can exercise this control, we have been able to reduce our atomization air pressure from 90-lbs. per square inch with cold enamel, to a surprising 30-psi, thereby effecting a radical reduction in costly overspray present in excessive fogging by high pressure spraying. At the same time, our fluid pressure has been cut from 15-psi to 8-psi.

We Use Less Air Pressuure In Our Spraying Operations

"This two-thirds saving in air pressure translates itself into some impressive cost savings all down the line. It means, for example, that the 23-cu.ft. of air per gun per minute at 90-psi with cold material added up to 92-cu.ft. per minute for our four gun system which, when compared to our present system, looks like this: We are now using only 7½-cu.ft. of air per gun per minute, or, collectively, a total of only 30-cfm. for the entire setup.

"When you consider the cost of compressing this much air, the power consumption and the equipment maintenance, the advantage is indeed convincing. Consider too, that we use a fairly large quantity of finishing material each year in finishing toilet seats. . . . That is why savings of this order are so important to us, a fact that pin points the really terrific job our new paint heater system is doing for us.

Less Material; More Coverage; Practically No Overspray

"Most impressive feature of the heated system has been in the reduction of overspray which, again, takes us right back to temperature and viscosity control with the accompanying air pressure reduction. We are not only flowing 43.6% less material through our guns, but we are actually getting 40% more product coverage. For example, we now get 97 pieces per gallon of paint as compared to 50 with the cold spray.

"Overspray presents another problem not too often considered by many people. When you are spraying a part, the paint coming out of the gun either goes onto the product, or it goes into the booth with the air mist eventually being carried up the stack by the blower system. As a result, waste paint is

Mac's DURA-PLAS WIPING STAINS

The newest and most scientifically balanced rapid-drying wiping stains yet developed.

Are available in a full range of transparent and semi-transparent colors, give excellent uniformity and natural beauty to different grain wood surfaces.

May be sprayed, brushed or dipped; will wipe easily to a uniform color. Will air dry in two hours and kiln dry in one hour or less depending on the degree of temperature.

Are moisture resistant and penetrate the wood fibers deep enough to give excellent adhesion to top coat finishes.

Mac's Dura-Plas Wiping Stains produce an extremely tough finish that will not readily scratch nor mar nor become brittle when used under sealer and lacquer, conversion varnish, THERMO-LAC or any acceptable top coat finish.

When ordering advise color desired and the kind of wood on which it will be used.

Order five gallon trial can at drum price and convince yourself!

"Eighty Years of Service"

The Lawrence-McFadden Co.

Headquarters for Fine Finishes Since 1875

7430 STATE ROAD PHILADELPHIA 36, PA.

deposited on the walls of the booth and frequently in the stack. To keep the booth in proper working order, it becomes necessary to carry out a never-ending maintenance program directed at cleaning paint deposits caused by overspray.

"It stands to reason then that the less overspray you have, the less deposits you will have. It follows also, that maintenance time and costs will be much less. Similarly, you can't spray products and overhaul the equipment at the same time, so all maintenance work must either be done at a sacrifice of production or in extra hours at substantial cost.

Less Cleaning of Booths; Less Thinner; Faster Drying

"With the old system we were cleaning the booths about every 30 days, and we were doing it on overtime; two men on a Saturday afternoon. Multiply this by four booths, and you begin to get the idea. In the 30 days since we installed our new equipment, we have used over 1000 gallons of finish coat with no appreciable deposit of paint on the booth equipment, and from all indications, it will be surprising if we have to clean the booths more than twice each year.

At right side of booth, a long square box encloses heat exchanger where enamel for this operator is heated. Circulating hot water in hose follows the material almost to spray gun, to keep the flowing paint hot.

"Another alternative is to use thinner to lower the paint viscosity, as is the practice in many factories. Excessive thinning serves no useful purpose. As soon as the paint is on the product most of the solvents evaporate into the air. This makes it necessary to apply coat-after-coat to build up a suitable thickness of paint on the product. With the paint heating system, we get a full-bodied finish with the top coat of enamel, and fewer passes with the gun than could be obtained by spraying cold material. This type of finishing brings out a high gloss and eliminates sand scratches.

Our Spray Operators Are Sold on Hot Spraying

"Slow drying and discoloration had always been problems for us when we used cold material; however, we have found that the use of heated paint is eliminating these troubles altogether. I think this is due to heating of the paint which, by knocking out the low boiling solvents, permits faster drying. As for discoloration, it is really too early to tell for sure, but our experience so far indicates that the use of heated paint definitely prevents discoloration.

"It is an old adage that a product is no better than the service behind

They Have Been Enlarged!

We have had to enlarge our laboratory facilities because of the demands of a constantly increasing volume of business. The old labs, of which a section is shown above, proved to be inadequate. With these enlarged facilities, and the additional space which our new building provides, our customers are assured of the same prompt and specialized service in the formulation of high quality finishes to meet their regular and special requirements.

- **FURNITURE FINISHES:**
  - Lacquers
  - Sealers
  - Fillers
  - Toners
  - Glazes
  - Pigmented Wiping Stains
  - NGR Stains
- **LEATHER FINISHES**

Snyder BROTHERS COMPANY

Manufacturers of Quality INDUSTRIAL LACQUERS

P. O. Box 548 — TOCCOA, GEORGIA

Write, wire or phone us! We offer a complete technical service. Also, speedy truck delivery.

ELIMINATE COSTLY REJECTS IN YOUR FINISHING DEPT. WITH DETROIT "TAC" RAGS

DETROIT "TAC" RAGS are an absolute necessity for cleaning any metal, wood or plastic surface before painting. Removes all dust, lint and sanding particles. Order today through your supplier.
STANDARD OF THE FINISHING INDUSTRY SINCE 1934
DETRO MFG. & SALES CO., INC., CULVER CITY, CALIFORNIA

YOU can rely on
Randolph
for prompt shipment
in any quantity of
• FINISHES •
Lacquers • Enamels
Dopes • Thinners
Clear Metal Finishes
Colored Lacquers
Clear S. G. for Metal
Texture Enamels
Specialized Production Finishes
Aircraft Finishes
RANDOLPH
PRODUCTS CO.
CARLSTADT, NEW JERSEY

it. I don't know much about that, but this much I do know: The thoroughness and conscientiousness of the representative of the paint heating equipment manufacturer was of tremendous help to us. He designed, engineered, installed and operated the system in a down-to-earth, shirtsleeve fashion.

"It is one thing to sell management on a system, but the tough job is to sell the spray operators. If they don't like it, you're in trouble. He not only sold them, but educated them on its use. Before he left the job, he had it working perfectly so that our only job was to start spraying.

"The uniformity and better quality of the finished product has put us in a much better position with our competition. We are putting out a better looking job and doing it at a saving in material and labor. As a matter of fact, we are so pleased with the job, that we intend to install a similar system in our primer department very soon."

The equipment in the Plumbers Woodwork Co.'s finishing department includes four dry spray booths, one water heater, four heat exchangers, four production spray guns, four fluid regulators, a 60-gallon pressure feed paint tank, and 8-ft. lengths of heated fluid hose. Operation is at an 8-lb. fluid pressure, 30-lb. atomization pressure, and at a paint temperature of 140° F.

Acknowledgment: Photographs and manuscript for this article were supplied by The DeVilbiss Co., through its advertising agency, Brook, Smith, French & Dorrance, Inc.

Yellowing Trouble

NOTHING can be more irritating to a finishing supervisor or foreman than to find part or all of his production work in white and pastel shades being rejected because of a dull hazy yellow film which sometimes appears after the baking operation. If it happens where you are using infrared baking units you may find that some parts are moving along too close to the source of heat radiation. A slight adjustment in this distance may remove the cause of the yellowing, and yet not affect the quantity of heat enough to cause undercuring.

In the case of white products, an age-old method of alleviating some yellowing in all types of ovens is the addition of a slight amount of blue color to the white enamel. Care must be taken to avoid adding too much blue to the white enamel, as an excess of blue may be undesirable.

These expedients are recommended for "on the spot problems". They are no substitute for well formulated materials, as purchased from the manufacturers.

Edward Van Romer Joins Raffi & Swanson

Mr. Edward Van Romer recently joined the sales staff of Raffi & Swanson, Inc., Wilmington, Mass., as sales and service representative in Central and Western New York and Pennsylvania area. He will handle the company's complete line of synthetics, lacquers and specialized finishes.

Mr. Van Romer has a background of nine years in industrial finishes field as formulator and technical service representative.

NOW Sparkling MULTI-COLOR Finishes

POLY-HUE

- NEW color-flecked textured enamel
- sprays on in ONE APPLICATION
- MANY standard BLENDS—2 to 4 COLORS each

EASY, FAST TO USE!

Without stirring, Poly-Hue sprays on rapidly from a single spray gun . . . leaves no spray dust! One coat covers completely . . . Bonds firmly to metal, wood or plastic.

HARD, WASHABLE FINISH!

Poly-Hue resists chipping . . . cleans easily . . . keeps maintenance costs down.

Color flecks are through the film . . . can't rub off.

HELPS SELL MERCHANDISE!

Poly-Hue's bright, pleasing color patterns attract customers . . . add new sales appeal to television cabinets, children's toys, hotel, restaurant and porch furniture, advertising displays . . . countless household and commercial articles.

WRITE FOR DETAILS . .

AMERICAN LACQUER SOLVENTS CO.
Phoenixville, Pa.

AMERICAN LACQUER AND SOLVENTS CO. OF FLORIDA
Tampa, Florida

No Finer Finishes Ever Made

This list shows where we are most frequently able to save time and money for our customers in aircraft production.

1 Cleaning aluminum, steel and magnesium
2 Stripping paint (solvent or hot tank)
3 Deoxidizing aluminum
4 Deflocculating paint in spray booths
5 Preparing metal for painting
6 Removing scale and corrosion
7 Preventing corrosion

FREE Our 48-page illustrated booklet "*How to Clean Metals in Aircraft Production*" describes all the cleaning jobs in the list. For your copy write Oakite Products, Inc., 32F Rector St., New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING
OAKITE
MATERIALS • METHODS • SERVICE
Technical Service Representatives in Principal Cities of U. S. and Canada

What Flash Point Is

ALL INDUSTRIAL finishers must handle and store paints, lacquers and solvents. In order to meet Fire Department standards every employee in the department should understand the term "flash point" which is the basic test for inflammable materials.

"Flash Point" is the temperature at which a liquid material forms enough vapor to cause a flash in the presence of a test flame. The test is usually performed in a Tagliabue (Tag.) open cup flash tester. The liquid is placed in the cup and the temperature is raised very slowly until it is approximately 15° below the expected flash point. The test flame is applied at ½° intervals until a distinct flash is observed. The temperature at which this flash occurs is the recorded "flash point".

The Interstate Commerce Commission has established requirements for handling and shipping materials based on flash point. The use of heavy or light gauge steel containers is determined by the flash point of the material. Low flash products are packed in containers made of the heavier gauge steel, and higher flashes are placed in containers of light gauge steel.

A clear understanding of this often used term should be an important step in every finisher's education.—*G.I.N.*

J. O. Ross Engineering Corp.'s Boston Office Enlarged

J. O. Ross Engineering Corp. announces that its Boston office has moved into much larger quarters, but at the same address, 79 Milk St., Boston 9, Mass. These new quarters will provide nearly 50% additional space in order to accommodate additional personnel, to be added to the sales force as well as the drawing room force. F. W. Partsch, Vice-President, will continue as the manager of the Ross Boston office.

Automotive Colors Are Carefully Pre-Tested

COLOR is rapidly becoming one of the dominant factors in all automobile designing and manufacturing. Look in the area of the final assembly line, where the color intensity—highlighted by pastel shades and 2-tone combinations—grows as the cars near completion.

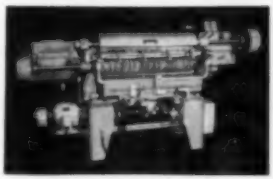
The color flow starts on the branch feeder lines, which deliver such components as wheels, seats, fenders, hoods and tops—all painted to blend with predetermined color combinations—to the main line on a set schedule.

It reaches a climax in the drive-away area, where hundreds of cars, with dozens of vibrant color combinations, are stored preparatory to movement into dealer showrooms. The showrooms, in turn, have taken on a new-color look in line with the preference of Mr. and Mrs. Car Buyer for more brilliance inside and outside their automobiles.

At Ford Motor Co., for example, dozens of color combinations for Ford, Lincoln and Mercury cars are assembled daily. In addition to the wide variety of interior fabric tones, Ford offers 13 single-tone and 36 2-tone exterior color choices. Mercury has 15 single colors and 30 2-tone combinations, and Lincoln has available 16 solid body colors and 35 2-tone combinations.

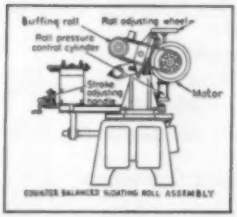
The hood and fender department of the Dearborn assembly plant, the largest of Ford's 20 assembly installations, provides an

The CLAIR model 202, or one of seven other basic Clair models may well be the same fundamental features so outstandingly characteristic of all CLAIR machines . . . Direct line actuation . . . Hydraulic and Air cylinder controls . . . Sealed Anti-Friction bearings . . . Interchangeable parts, etc.



MODEL 202 double roll assures uniform and simultaneous coverage of both sides at any pre-determined buffing pressure, over flat or contoured surfaces. "It Floats On Air".

Horizontal Design offers - - -
★ Waist high loading - - less operator fatigue!
★ Better Visibility!
★ Rolls can be changed in two minutes!
★ Easier to exhaust and keep clean!



CLAIR

MANUFACTURING CO., Inc., OLEAN, N.Y.

Offering the Most VERSATILE Line of Surface Finishing Machines

example of the impact of color on automobile production. In a single week, Dearborn assembly plant paint lines use nearly 100 miles of masking tape—approximately twice that used two years ago—in its body painting operations.

Ford, Mercury and Lincoln product planners constantly study trends in color preference everywhere in the country as result of the intensified search for individuality and distinction in color by car manufacturers. Hundreds of color shades and combinations were evaluated by Ford before the exterior and interior color variations of the company's 1955 passenger cars were selected.

Generally speaking, the Southwest likes the brighter colors and the Northeast the more conservative. The same trend generally is true in wearing apparel and architecture. And it has been noted in times of national economic distress, the conservative blacks, blues and maroons are preferred as compared with the more flamboyant tones that hold the spotlight in prosperity.

Durability of exterior and interior finish — no matter what shade—always is a final determining factor in Ford's color selection program. All colors undergo extensive tests.

One takes place in southern Florida where exterior colors are exposed to the combined effects of the sun's ultraviolet rays and salt air—the most rigorous durability test for paint.

Fabrics are tested in the same area under glass to simulate conditions on the interior of a car.

STRIPPING EPONS

with **BECK ECONOSTRIP**

is as easy as

DUNKIN' DONUTS!

...and just as FAST—

LOW COST and SATISFACTORY

THE TOUGHEST FINISHES COME OFF CLEAN IN MINUTES!

Because ECONOSTRIP is so free and easy rinsing it really is as easy to use as dunkin' donuts. Immerse work in the stripper, either by hand or conveyorized system and then rinse with fresh water. No stripper scum... Parts are completely clean and ready for refinishing.

Consider these ECONOSTRIP ADVANTAGES

- Remarkably effective for EPONS, Lacquers, Enamels and other tough finishes
- Will not harm soft metals
- Will not remove phosphate coatings
- No scrubbing or manual assistance
- Economical—More jobs per gallon at lower cost
- Recommended by leading finish manufacturers

SEND FOR FREE BULLETIN

BECK EQUIPMENT COMPANY

3350 WEST 137th STREET — CLEVELAND 11, OHIO

Paint and pigment companies in some instances have experimented for several years to perfect certain colors.

The basic formula for any color family must stand up under tests of at least nine months duration before it is considered by Ford color experts.

The tests make sure the growing variety of colors applied to steel bodies on Ford, Mercury and Lincoln final assembly lines will be durable as well as attractive.—*Ford Motor Co.*

Conforming Matrix Advances Two Executives

The appointment of Milton T. Schimmel to the post of General Manager of Conforming Matrix Corp. is announced by H. E. MacArthur, President. Schimmel came to Conforming Matrix in 1948 as Engineering Sales Manager. He has specialized in mold design and is widely known for his experience in the field of production spray painting and the designing and building of special equipment.

M. T. Schimmel and G. D. Minnick

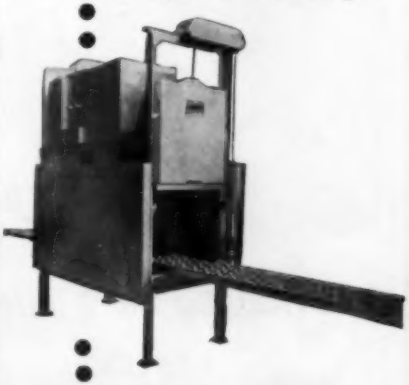
Gerald D. Minnick has been made Plant Superintendent. Mr. Minnick came to Conforming Matrix in 1951, first handling field service, and in 1953 became Sales Engineer.

Conforming Matrix Corp. is the original and largest manufacturer of spray painting and masking shields, tools and fixtures, mask washing machines, and automatic air-operated, hydraulically controlled, machinery for the spray painting of a variety of parts on a mass production basis.

YOUNG BROTHERS OVENS

do more baking and drying

More dependably



Single compartment, roller conveyor, tunnel-type, oven with lift doors at each end.

Whatever your problem . . . or process in baking and drying, there is a Young Brothers Batch or Conveyor Oven that will meet your exact requirements. For over a half century, Young Brothers Ovens have established an incomparable record for dependability, efficiency and economy in operation. Find out how Young Brothers Ovens can improve your production and lower your costs. Write for Bulletin 4 today!

YOUNG BROTHERS CO.
1835 COLUMBUS ROAD
CLEVELAND 13, OHIO

Estab. 1896

Quality Control of the Repeat Paint Orders

IN EVERY paint supplier's plant a department that must be closely related to the formulating department is what is known as "Final or Quality Control." It is the function of this department to be sure that all materials shipped out as a finished product must meet the specifications set up by the formulating department.

This means that when the factory has made up a given quantity of paint from the formula received from the sample room or formulating laboratory, working limits have been set up as to grind fineness, viscosity, application, baking, color, gloss, film hardness, etc. These batches must, of necessity, meet the specified requirements to a very close degree, or all past work has been in vain.

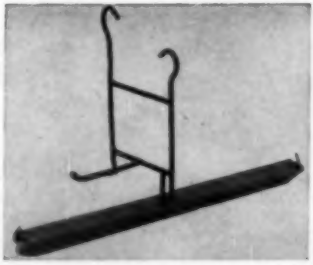
There is nothing more discouraging or more disadvantageous to the paint manufacturer or salesman than to receive a report from a user that some specified shipment does not give the same results as the sample submitted. It can be readily seen why it is necessary to have a good final control department that operates as a true quality control. This department should be entirely divorced from the factory because of the pressure brought to bear by over enthusiastic employees; and by production quotas and for various other reasons why this material should be released when it does not properly meet the specifications originally set up.

3 LBS.
11 OZS.
OF
PAINT
BUILD-UP

STRIPPED IN 2 MINUTES!

By
KOLENE
PROCESS

Descriptive bulletin and additional information available upon request.



KOLENE CORPORATION
12890 WESTWOOD AVENUE
DETROIT 23, MICHIGAN
Originators and Suppliers of Kolene Chemical Processes and Equipment

This department must have personnel who have had experience in the make-up of these finished products—men who can approve or reject colors and above all, men who have the traits of diplomacy and impartiality. Sooner or later this department will be the buffer between higher management and factory management regarding quotas that should be met and finished products that do not quite meet the specifications.

If or when our modern paint manufacturers re-evaluate these two departments and place them on a higher plane, many troubles that are experienced both by the user and the manufacturer will be eliminated.—*Ken Copeland.*

Interchemical Names Dewey to Research Administration

Phillip H. Dewey has been appointed to the newly created position of administrative assistant at the central Research Laboratories of Interchemical Corp. in New York.

In this capacity, Mr. Dewey will work on the business administration portion of the company's research effort. He continues as Editor-in-Chief of the Interchemical Review, technical publication of the Corporation.

New Circulating Paint Heaters

For painting operations requiring a high degree of paint temperature control, Bede All-Electric Models E and EE are equipped with hot spray recirculating system to provide constant circulation when spray application is intermittent or irregular. Adjustable temperature and fluid pressure controls afford uniform performance with all paints and solvents.

Both Models are Underwriters approved.

THERE'S A LOT TO BE SAID

for a

SEA-LAC

EPON FINISH

Chief features of this newest of fabulous finishes are: (1) Its remarkable resistance to . . . abrasion, alkaline, acid, and perspiration. (2) Good adhesion — and it can be formed after it's been put on and baked. Let us custom design an Epon finish for your particular use.

DURALAC CHEMICAL CORP.
84 LISTER AVENUE, NEWARK 5, N. J.

farm equipment painted by

HOT SPRAY PROCESS

LONG LIVED paint adhesion to metal is highly important when farm machinery and other metal products are exposed to year 'round weathering. The Knoedler Manufacturers, Inc., Streator, Illinois, producers of farm equipment and tractor accessories, was faced with the problem of spraying a protective coating over its farm machinery that is exposed to such "tough" climatic conditions.

In addition to wanting a better finish, Knoedler Manufacturers, Inc., demanded a uniformity of coverage and gloss that is frequently subject to the effects of temperature variation, humidity and human error.

The Knoedler company turned to hot spray and almost immediately the paint department was able to duplicate the efficiency and quality control of the mechanical departments of the company. Paint department headaches were lessened. Runs and sags were eliminated, and production time was reduced by almost 30%. [*To page 86*]

The paint being sprayed is heated as it flows through paint heater shown at upper left.

You too CAN CUT FINISHING COSTS WITH

PERFEX SATIN FINISH

CHECK YOUR FIGURES WITH THIS CASE HISTORY:

	"X" Company	Your Figures
Cost of top coat lacquer (two coats) per year	$10,000	$_____
Less 50% (one coat Perfex equals 2 coats of lacquer)	$ 5,000	$_____
	$ 5,000	$_____
Less 10% (saved since Perfex costs less than lacquer)	$ 500	$_____
Cost of PERFEX	$ 4,500	$_____
Less 20% (labor costs saved by eliminating second coat)	$ 1,900	$_____
ACTUAL cost for PERFEX Finish	$ 3,600	$_____
SAVINGS PER YEAR WITH PERFEX	$ 6,400	$_____

HERE ARE A FEW MORE OF THE PLUSES YOU RECEIVE FROM PERFECTION'S EXCLUSIVE PROCESS OF SYNTHETIC FLATTENING:

- A Clear, Rubbed Effect Finish
- A Waxed Feel
- A Liquor Proof Finish
- A Water Proof Finish
- A Tough Elastic Finish

IF YOU MANUFACTURE FURNITURE, WRITE US FOR SAMPLES OR DEMONSTRATION

Perfection PAINT & COLOR COMPANY

INDIANAPOLIS 2, INDIANA

Obtained an Improved Finish With Hot Spray

Knoedler explains that uniform viscosity and greater quality control are achieved by the hot spray process which substitutes heat for thinner. A higher solids and lower solvent content film is produced which creates a better build and holdout. Greater coverage was effected and shrinkage was all but eliminated. A superior finish is now accomplished with one coat that previously required two.

Hot Spray System Enabled Firm to Reduce Costs

Greater coverage and quality control not only cost less, but manhours were reduced by as much as one-third. Less overspray reflected a material savings of over 25%, and the total finishing time was materially reduced due to faster application.

In striving for better quality, Knoedler Manufacturers, Inc. has attributed these advantages to the hot spray process:

Smoother finish with less orange peel; better atomization.

Higher gloss; less shrinkage with hot spray film.

Better coverage; higher solids.

Better build and holdout; less solvent content, minimum penetration.

Less runs and sags; higher solids with less solvents.

Faster application; less passes with the gun, greater coverage.

Better adhesion; better atomized and denser hot spray film grips metal surfaces better.

Reduced material costs; lower atomizing pressures mean less wasteful overspray and substantial material savings.

Knoedler claims that the paint heater units now in use reach full heat in three to five minutes . . . . and that they have required no maintenance cost.

Acknowledgment: This story and the photograph were supplied by The Spee-Flo Co., Houston, Texas.

Behr-Manning Makes Abrasive Film Available

"Coated Abrasive Belts Speed Metalworking Production" is a 27-minute sound and color film that reveals new finishing developments in coated abrasives technology. Methods, machinery and product applications shown will give the viewer an up to date problem and solution session aimed at cutting finishing costs.

This 16-mm sound, color film is available to foremen groups, plant production training classes, technical societies and college engineering and trade school groups on application to: Dept. FI, Behr-Manning Div'n, Norton Co., Troy, N. Y.

Penn. Salt Promotes Land

Hugh C. Land, 39-year-old Colorodian, will succeed William P. Drake as head of the Pennsylvania Salt Mfg. Co.'s Industrial Chemicals Division. Mr. Drake was named executive vice president when president George B. Beitzel announced plans to retire later this year after 25 years service with the company.

J. D. Rode Advanced by Du Pont

John D. Rode, technical adviser of the Du Pont Co.'s Finishes Division, Trade Sales, has been appointed assistant trade sales manager, maintenance finishes.

This is a newly created post made necessary by greatly increased sales of maintenance finishes in recent years.

PAYS FOR ITSELF... THEN STARTS PAYING YOUR OVERHEAD!

DeBURGH COMPLETE FINISHING SYSTEM . . .

More than 140 installations in furniture plants producing 25 to 2500 pieces a day prove it! Labor savings up to 50% . . . floor space savings up to 30% . . . unmatched flexibility . . . your complete investment amortized in a matter of months!

GET MORE FACTS NOW!

ENGINEERED AND INSTALLED BY KOCH

GEORGE KOCH SONS, INC.

EVANSVILLE, INDIANA

Electrostatic Painting

In the July 1954 issue of *Industrial Finishing*, you published an article pertaining to Electrostatic Painting. We would appreciate some general information on this type of equipment from the manufacturer. We have no specific use for such equipment at this time, but if we knew more about its scope and costs, we may find a definite use for it in our plant.—*H. I. Co.*

A story about Electrostatic Spray Painting appears in the advertising pages of every issue of this magazine.—*Editor.*

Rainbow Pearl Effect

We are sending you samples of metalized and coated acetate which has been treated in such a manner that the finish appears as a multi-colored rainbow or mother-of-pearl effect.

Could you furnish us with the names of manufacturers who make materials suitable for this type of processing, either on the metallic surfaces or the acetate surfaces?

If this should involve any special processing, other than the materials involved, could you kindly put us in touch with those who are familiar with this process and where we could obtain available information or materials?—*A. E. Co.*

These products were evidently coated with a pearl essence or iridescent lacquer. In a letter we are naming several manufacturers of such finishing materials.—*Editor.*

Store Window Coating

We notice in the "Letters from Readers" on page 82 of March issue, something about a type of lacquer for spraying on store windows, in which you inform the correspondent that you are forwarding names of manufacturers of this product. We would appreciate getting the same information.—*P. S. & S.*

Information sent by letter.—*Editor.*

Spray Equipment Mfrs.

We are contemplating installing spraying equipment in our plant and are eager to get all available information on the equipment, booths, etc. We believe that this information will be best forthcoming from the manufacturers. Anything you can do to get us to the proper people will be very much appreciated.—*E. Products.*

Most of these companies advertise in this magazine. In a letter we are giving you their names and addresses. —*Editor.*

We Make "Duro" Paints

In the "Letters from Readers", page 89 of April issue, we notice an inquiry asking about Duro aluminum shell. Although we do not entirely

The ingenious Beaver Dam, constructed of twigs, brush, stones and mud, possesses amazing sealing qualities . . . some dams extending over 1000 feet across and sealing off ponds of hundreds, even thousands of acres.

when it comes to

sealers . . .

Nature's architect, the Beaver, seals his structures with twigs, mud, and a great deal of time and effort. In industry, fortunately, important sealing operations are accomplished much more easily and efficiently thanks to the great variety of fast application, high quality sealers manufactured by James B Day & Co

JAMES B. DAY & CO.
CHICAGO 14, ILLINOIS

Industrial Finishes for Application by All Methods

sealers	**lacquers**	**stains**
fillers	**enamels**	**glazes**
shellac	**undercoats**	**specialty finishes**

Better Industrial Finishes for over Half a Century

recognize the material from the description given in this letter, our trademark is "Duro", and it is possible that someone may be using one of our aluminum coatings along these lines.

If you will give us the name and address of "Z", we might be able to tell them whether the product they inquired about is manufactured by us.—*O'Neil Duro Co.*

Information supplied.—*Editor.*

"That's the good spray gun, I'll toss you for it."

Automatic Spraying

Could you please send us the names and addresses of companies that make automatic and semi-automatic paint spraying equipment? We are interested in spraying both flat and cylindrical pieces.—*W. I. E.*

Yes, in a letter we are naming several—and they design, manufacture and install several different types of semi and fully automatic machines.—*Editor.*

Splatter or Speckle

We noticed on page 86 of April issue in "Letters from Readers", the answer to an inquiry by a boat company for sources on "splatter" paint. Recently we have been asked by our maintenance people to develop for them sources for a similar material. Will you tell us, as soon as possible, the names and addresses of the several manufacturers of this type material?—*X. Aircraft Corp.*

Information furnished.—*Editor*

Grained Finish on Steel

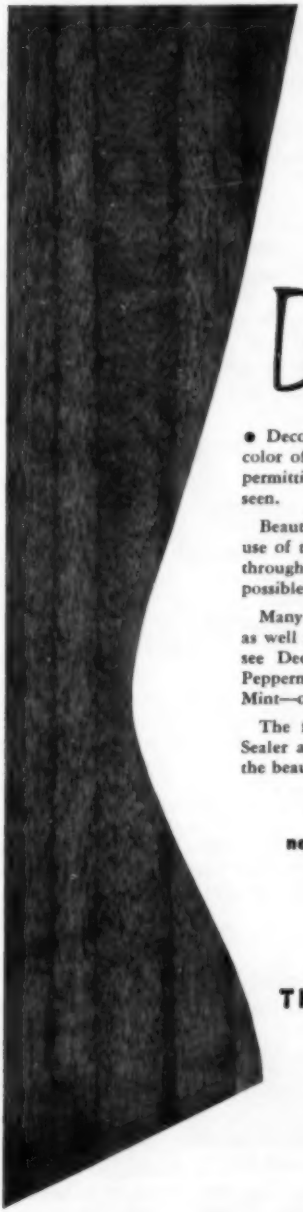
In reference to one of the "Letters from Readers", entitled, "Grained Finish on Steel", page 88 of April issue, we manufacture such a product which we believe these people would be interested in.—*Duralac Chemical Corporation.*

Non-Magnetic Tack Rag?

One of our baking enamel suppliers informs us that there is a non-magnetic tack rag on the market. We would appreciate the name of the manufacturer.—*M. Products.*

We believe you must mean "non-static". All tack rags are non-magnetic; to be magnetic they would have an iron or steel content, which none of them have.

In reference to the "non-static" tack rag, we do not recall of ever having heard of this term used in connection with tack rags. It would seem to us that if a tack rag did ac-



True Grain of the Wood in Light Finishes with

DECORALITE

● Decoralite interprets the true wood beauty, changing the color of the wood to any desired color or bleached effect but permitting the grain and all the cross fire of the wood to be seen.

Beautiful color styling and decor can be obtained with the use of this product. Lighter finishes which were only possible through bleaching can easily be produced. Decoralite makes possible better uniformity of color and effect.

Many of the new colors shown at the last markets in modern as well as traditional were obtained with Decoralite—Did you see Decoralite in Charcoal, Ermine Brown, Kissing Pink, Peppermint Pink, Turquoise, Robin Blue, Bahama Yellow, Mint—or perhaps Topaz or Sage Green?

The finishing coats were Schaefer's Crystal Water White Sealer and Crystal Water White Lacquer, to further enhance the beauty of the wood and retain long lasting protection.

Use Decoralite, a medium to obtain new startling colors and finishing effects.

THE SCHAEFER VARNISH COMPANY, Inc.

15th and Magnolia Streets
LOUISVILLE 10, KENTUCKY

cumulate some static electricity while wiping furniture or cabinets, this could be dissipated quickly, easily and simply by touching the rag to some metal surface that is grounded.

If you care to pursue this question further, by communicating with some of the tack rag manufacturers, we are happy to send you the names and addresses of several of them by letter.—*Editor.*

"Talk about your foaming in spray booths, the boss is mad enough to be foaming outside of 'em!"

Sandblast "Remover"

I am interested in obtaining some information on a portable sand blasting unit. The type of machine I am referring to is used for removing old finishes from wood surfaces.—*P. G.*

In a letter we are naming three concerns that can probably supply what you want.—*Editor.*

That Rosewood Finish

We have read the Question and Answer appearing on pages 98 and 99 of April issue concerning rosewood finish for turned handles. We have furnished dip materials for such a process in which the entire operation is done by dipping.

If "M. & S." cares to furnish us with some unfinished pieces, together with one finished piece showing what they want, we will be glad to see if we can work out something for them which will do away with their hand work.—*Barrett Varnish Co.*

Spec. Enamel Wanted

We wish to locate a source that manufactures the following specification product. We would like to be able to purchase at once some specification FXS-934 Enamel, Lacquer, Nitrocellulose, Gloss.

If you know of any lacquer manufacturer who might have this item in stock we would appreciate hearing from you at once so that we may get some immediately to finish up a government specification contract which is being held for this product.—*S. Products Co.*

We are not sure which companies stock it, but are suggesting one source in a letter.—*Editor.*

Ballotini Processing (Reflective Finishes)

We are interested in making special reflective surfaces, using Ballotini which would be in the region of .067-mm. in diameter and would have an index of refraction of about 2.2.

We are unable to find any technical data regarding the types of adhesives

Admiral® chooses BARRETT BARCOLOID

Admiral Corporation chooses BARCOLOID
POLYCHROME METALLIC FINISH
– for pattern consistency
– ease of application
– durability
– scratch resistance
After testing many types of finishes for its High Fidelity Phonograph 4C26, Admiral Corporation chose BARCOLOID Polychrome Metallic Finish supplied by Barrett Varnish Company, Cicero, Illinois. Admiral found that BARCOLOID met all requirements for scratch resistance, durability, pattern consistency and easy application in high production. Moreover, Admiral reports favorable sales reaction and minimum fading in using this finish.
BARCOLOID is a one coat, hammer
Paint manufacturers, working with ALCOA Pigments, have developed a rainbow of dazzling Polychrome Finishes that are building big sales for a wide variety of products. These finishes cost no more than ordinary coatings, and they save money on surface preparation as well.
Get the facts from your paint manufacturer, or write ALUMINUM COMPANY OF AMERICA, 1732-E Alcoa Building, Pittsburgh 19, Pennsylvania.
ALCOA ALUMINUM
ALUMINUM COMPANY OF AMERICA

Reproduction of the ALCOA ALUMINUM advertisement appearing in the trade publications. Advertisement describes BARRETT Barcoloid and its many time and money-saving features.

ONE COAT HAMMER

Available in 25 Standard Colors

BARCOLOID one coat hammer finish is available in 25 standard colors. Special colors to customer requirements will be matched when the batch size warrants it. Barcoloid forms an attractive hammered effect which is especially recommended to cover rough metal and is used on such items as vending machines, vacuum cleaners, heaters, ovens, phonograph mechanisms, etc.

BARCOLOID is manufactured in two standard types. Type A Barcoloid will either air dry or bake. It has excellent color retention in baking. Type B, which bakes only, attains greater mar resistance than Type A. Other one coat hammers for specialized application are available where the batch size warrants it.

Write For Full Information, Data Sheet And Color Range

Barrett Varnish Company

1532 S. 50th COURT CICERO 50, ILLINOIS

a complete line of dependable industrial finishes since 1870

which should be used to apply the Ballotini to aluminum foils and sheets, and wonder if you could help us in this direction?

We believe that the index of refraction of the adhesives themselves play a big part in the efficiency of the reflective surface, and that in some cases the under layer should be of a different material to the top coat applied over the Ballotini itself.

We have seen samples of reflective finishes from the states and it appears that this process is well known, and it is also obvious that some special plastic or other adhesives are used, which give a remarkable brilliance. It may be the case that in some of your past issues of *Industrial Finishing* this process has been discussed, and if so, would you be good enough to let us have copies.—*O. M. & Co., London, England.*

Will some reader please write us something informative about this?—*Editor.*

Graining Equipment

Please send us the names and addresses of firms that make or supply graining equipment.—*M. R. Co.*

Three or four of these companies advertise in this magazine. Look over your recent copies.—*Editor.*

I Can Supply Small Finished Panels

I am interested in the inquiry of P. & L. Co. (April, page 92) for someone who is interested in making small wood samples. I gather from his question that he is looking for someone to actually stain the samples. Your answer seems to refer only to procuring the wood.

If P. & L. Co. is looking for someone to apply the stain and supply the wood, I might be able to do both, depending on size and type.

I am a finishing foreman and in my work I have made several hundred samples for such concerns as Schrank Pajamas, Kleinert Co., Interwoven Socks, Coats & Clark Zippers—not only standard colors, but custom matching several stain colors every week. Incidently, I am starting such a service now, matching colors for custom finishing.—*A. Strand, R. D. 3, Stroudsburg, Penna.*

Sealer for Fishing Lures

We would like to advise the "C. Bait Co.", whose letter in regard to painting of fishing lures appears on page 80 of March issue, that we have a waterproofing sealer for wood which provides outstanding durability to lacquers and enamels which are subject to water immersion. We believe that our product will be of definite interest to them.—*The Bloomfield Chemical Co.*

Hard, Durable, Fast-Dry

We are interested in information on a hard, durable, fast-dry material for finishing lumber.—*W. Iron Works.*

Contact any of the manufacturers of finishing materials you see advertising in this magazine.—*Editor.*

Wood Dyes or Stains

Would you kindly send us the names of sources for dyes or stains for the coloring of wooden picks (like turned tapered tooth picks)? The finish must be non-toxic.—*S. Specialty.*

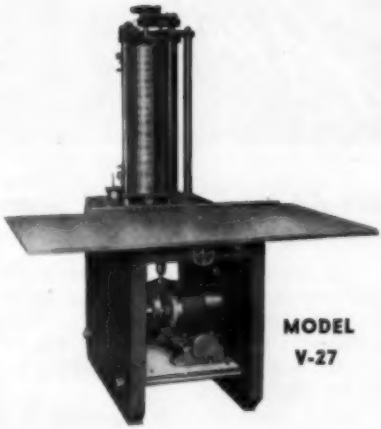
WOOD GRAIN PRINTING . . .

Machines of Quality and Durability

Over one-hundred Model V-27 vertical type machines now in production have printed more than six-million cabinets.

A proven tool, of rugged construction that can stand long hours of continuous production without interruption.

Can also be adapted to use for panel work. Maximum height 40".



MODEL V-27

The Model H-128 horizontal machine designed especially for flat panels up to four-feet wide. The print is continuous. Work of unlimited length can be grained. A timing device permits spot or register printing. All installations are supervised by a trained service man without cost.

Over Thirty-Years' Experience in the Design and Building of Fully Automatic Graining Equipment

For further information write or phone. MA-1352

HAMANT TOOL COMPANY

2916 E. SECOND ST. DAYTON 3, OHIO

Would You Buy and Store Materials in Bulk?

For some time we have been considering the possibility of buying our finishing material, such as sealers, lacquers, urea resin type varnish, etc., in bulk quantities to be delivered to us by tank truck.

There are certain problems that we will encounter in installing tanks to hold these materials. Some readers of this magazine, I am sure, have this type of installation and we would appreciate any information that you can give us in regard to buying and installing equipment for the bulk storage of finishing materials.

At the present time we are pumping these materials from 275-gallon tanks which are installed in centrally located supply houses. The pipe lines from these tanks go directly to the spray booths and the material is sprayed directly on the furniture from these pipe lines.

In the event that we do desire to install 2000-gallon storage tanks, we plan to transfer the material from the 2000-gallon tanks into our present 275-gallon tanks. We feel that this would be particularly necessary where we use urea resin type finishing material because the catalyst is added at the time the material is used, and we feel that to add the catalyst to a tank of 2000 gallons of material would be a mistake because the time involved in using this much material would be approximately 30 days in each of our plants. We believe that the material would perhaps absorb some of the catalyst over this period of time and thus retard the drying. We are planning to store the material without the catalyst and pump one of our 275-gallon tanks full, and then add the catalyst to it. This is just one of the problems we will encounter.

There are some other questions that arise in our minds in regard to buying material in this quantity, for instance, 1) should the tanks be under or above the ground? 2) what size manhole should we have covering the tanks? 3) how much and what type of agitation should we have? 4) should the tanks be stainless steel lined especially for the urea resin type finishing material?

We will appreciate any information that you can give us in regard to the problems that will be encountered in storing finishing material in bulk.—*Z. Company.*

Here are some of my suggestions:

1) It is my understanding that the capacity of tank trucks is 3000-gallons, therefore wouldn't you require this size tank rather than the 2000-gallon tanks?

2) Sealers generally used in the furniture trade are varnish sealer, lacquer sealer and sanding sealer. Heavy bodied sealers would have the tendency to quickly settle and, because of this, are not usually purchased in bulk lots.

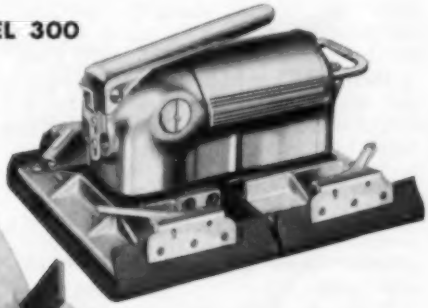
3) I note what you say about using a catalyst. Material that has been catalyzed has a pot life of from 6 to 18 hours, depending upon the type of catalyst used, therefore precautions would have to be taken regarding the

National Sanders

CAN SPEED PRODUCTION IN YOUR FINISHING OPERATION

Whether you need an orbital action sander for fast stock removal, or a straight-line action machine for working with the grain, National has the sander you need. They have a proven record of reliable and efficient service, long life, ease of operation, and for producing the best sanded surface in the shortest possible time. Let us send you full information . . . write today.

MODEL 300



NATIONAL NS SANDERS

NATIONAL AIR SANDER, INC.

2820 AUBURN ST., ROCKFORD, ILLINOIS

amount catalyzed; and this would depend entirely upon the hourly consumption. It would also be necessary to avoid letting material be in the pipe lines for any length of time. Any material that could not be used within reasonable time would be a loss.

4) Regarding the location of the tanks, under or above the ground, this would depend upon the flash point of the material and the temperature control of the materials. It would also depend upon the local city ordinance or fire department approval.

5) The minimum size of the manhole is 18-in. in diameter.

6) The type of material agitation would depend more or less on the type of material being used, particularly as to its viscosity, settling characteristics, etc. Agitation equipment for such a system is costly and, if materials are of heavy consistency, not too efficient. It would be much easier to keep materials properly agitated in smaller quantities than 2000 to 3000 gallon lots.

7) I would forget the idea of using stainless steel lined tanks, as it is not necessary; and it would be very expensive from an economical standpoint.

Without all the necessary information for making a definite decision, I would not consider using such a system unless I were certain that substantial savings in material cost could be effected; that better control of materials would exist, and that the daily consumption of materials would warrant such a setup. I would much prefer to store materials in 55-gallon drums, and put in a system for feeding materials to the operators from the original containers, or from the 275-gallon tanks you now have.

Before making a final decision I would like to have more information. For example, I would like to see a "Label Analysis Report" of all materials in question. I would like to know the viscosity of the materials when received, and when used. Also, the type of solvent used and the percentages of reduction; the daily consumption of each type of material used, and a plant layout.—*C. Raymond Syer.*

The tanks, with the exception of the solvent tank, should definitely be above ground and should be located inside a building where it will be possible to maintain heat during cold months so that the temperature will always be 72° to 75° F. regardless of outside temperature. The manhole in the tank should be large enough so that a man can get through the opening to clean the tank, and he should wear proper breathing equipment when he enters the tank.

It will be advisable to equip all of the tanks with either electric or air operated slow motion agitators. These agitators should have their propellers shaped to give a slow swirling motion to the material. No agitation would be required for clear gloss lacquer, but any finishing material containing a pigment or a flatting agent would have to be agitated. It certainly would be advisable to equip all of the tanks with agitators as you may change the material in the future.

The blades of the agitators would be of a size large enough to cover at least ¾ of the diameter of the tank. They should operate slowly, as it is not desirable to agitate the material fast enough to cause aeriation (whipping air into the material). In other words the agitators should not churn the material, but just keep it in motion.

For best results, it is desirable to line the tanks with stainless steel, so that the tank will not have a tendency to change the color of the material. A period of 30 days is quite a long

Remember—YOUR COST PER FINISHED ARTICLE IS THE TRUE COST OF YOUR CLEANER

Northwest's production-tested chemicals and "Right-the-first-time" recommendations will save you money.

Northwest's Metal Cleaning Specialists have at their command such outstanding processes as LO-HI pH—for cleaning prior to plating, painting or vitreous enameling; ALKALUME—for preparing aluminum for finishing and spot welding; INTERLOX—for phosphate coating; SPRA-LUBE—to control over-spray of "todays" paints in water-wash paint booths; PAINT STRIPPERS—specific to your needs; SUPERDRAW AND FLUID FILM—for drawing metals. Your Northwest Cleaning Specialist is as close as your phone.

time for material to remain in a tank and even water white lacquer may have a tendency to change color in an ordinary steel tank.

One man that I questioned in reference to the size of the tanks, suggested that you consider 1000-gallon tanks instead of the 2000-gallon tanks. You know it could be that production will not be sufficient to use up the larger quantity in 30 days, as you now contemplate.

Getting back to the tank lining, I suggested a plastic lining, perhaps a Bakelite, and I was informed that this would work out all right, but that there would be extreme danger in cleaning the inside of the tank, perhaps by scraping so as to avoid damaging the plastic lining. My thought of the substitute was the cost of the stainless steel which is pretty high.—*P. C. Bardin.*

Raffi & Swanson's New Plant

The new plant of Raffi & Swanson, Inc., at Wilmington, Mass., is dedicated to "Better Finishes for Industry" by its founder, Charles L. Raffi, and his partner, Martin S. Swanson. It marks 30 years of experience in product finishing and the technical problems solved during these years by the partners and their associates. It also reflects completion of the expansion program inaugurated with the recent acquisition by Raffi & Swanson of the Monsanto Chemical Co.'s Coating Division.

Concerns interested in the complete line of industrial finishes offered by this growing company are invited to write for a free copy of the brochure "The Raffi & Swanson Story".

Permite Expands Sales Division

The expansion of Permite sales operations and customer service is announced by Permite Paint Division, Aluminum Industries, Inc., Cincinnati, Ohio.

Also announced are the appointments of Bob Filippine, field sales manager; Gerald J. Boyer, sales operation manager, and J. W. Hulsbeck as district manager.

Mr. Filippine will work closely with the company's agents and field representatives, augmenting their efforts in servicing industrial and retail accounts. He brings to Permite a wide background in sales and chemical engineering in the paint and pigment field.

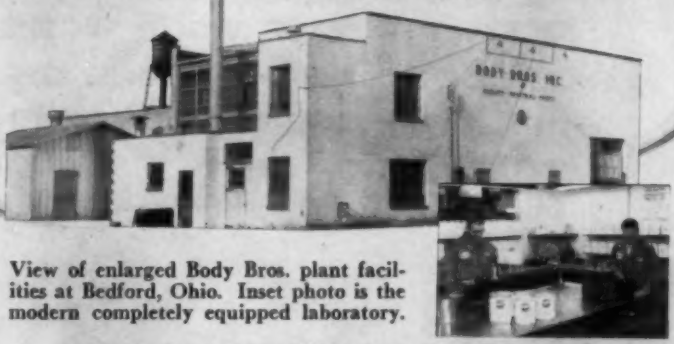
Mr. Boyer will aid in the supervision of sales and sales promotion, and direct a program to further expedite processing and delivery of orders.

Mr. Hulsbeck will contact distributors in Ohio, West Virginia and western Pennsylvania to coordinate distribution.

The new plant of Raffi & Swanson Inc. (industrial finishes) at Wilmington, Mass.

Now! Enlarged Body Bros. Facilities

Provide GREATER PAINT QUALITY AND SERVICE PROTECTION



View of enlarged Body Bros. plant facilities at Bedford, Ohio. Inset photo is the modern completely equipped laboratory.

How Body Bros. Facilities Serve You Better

- Modern fully equipped laboratory is available for specific job analysis and special finishing problems.
- Guaranteed paint values from exacting quality control tests of every batch.
- Exacting formulas tailor-made to fit your production requirements.
- Research for the development of better products.
- Broader line of production finishes and industrial maintenance paints.
- Delivery of orders when you want them.

MORE THAN A PRODUCT . . . A STANDARD OF EXCELLENCE

BODY BROS.
incorporated
BEDFORD, OHIO

BoGard FINISHES

A BoGard representative, experienced in all phases of industrial finishing problems, will be glad to call on you promptly at no obligation.

"HAND-CRAFTED QUALITY" with "AUTOMATION-LINE SAVINGS"

- **THIS IS BEING ACCOMPLISHED DAILY BY EVERY TYPE OF WOOD FINISHER. EXCLUSIVE DeBURGH FEATURES OFFER THIS ADVANTAGE TO ALL PLANTS — REGARDLESS OF SIZE!**

55 UNITS PER DAY*

2350 UNITS PER DAY*

*Names of Firms On Request

"Designed BY a Furniture Manufacturer FOR Furniture Manufacturers"

Investigate!

DeBURGH CONVEYORS, Inc.

10 SOUTH 11TH AVE.
EVANSVILLE, INDIANA

1741 K STREET, N. W.
WASHINGTON 6, D. C.

Pat. Nos. 2317675, 2640580, 2640607

ROCKFORD VARNISH

RV

ROCKFORD, ILLINOIS

MANUFACTURERS OF PROTECTIVE AND DECORATIVE FINISHES

Want to play games? Any resemblance between what this beach peach is doing and the great game of basketball is purely accidental. *But* — any resemblance between what our customers ask for and what we ship them had better *not* be accidental! We have put a lot of time and thought and effort and experience into developing our facilities so we can be sure to furnish *exactly* what is wanted. Our line of standard and special products is really extensive today — paints, varnishes, enamels, lacquers, or what have you. If you are game to let us tell you what perhaps we can do for you, just toss us a ball and we'll carry it . . .

Affiliate: GORDON BARTELS CO., *Roller Coating Specialists*

Multi-Color-Flek Enamel

Two or more distinct colors, for beautiful decorative effects, can be sprayed easily and quickly with standard spray equipment. The coating dries in an hour to a tough durable finish that will not crack or chip.

O'Brien's Color-Flek is available in many color combinations. It's an attractive finish that hides small imperfections in wood, metal and composition materials. Excellent for snappy decorative treatment on toys, furniture, cabinets, displays, backgrounds, etc. More information and a free sample are offered by The O'Brien Corp., Dept. I. F. 5, South Bend 21, Indiana.

For more data, circle 1 on colored card.

Tough White Enamel for Roller Coating

The Watson-Standard Co. offers the metal decorating industry a new epoxy coating specifically formulated for roller coating application.

The basic formulation, 13-327, and its modifications show excellent fabrication and adhesion characteristics. Of particular interest to cap and closure manufacturers, this coating has excellent tumbling resistance, scuff resistance and resistance to staining. Suggested baking temperature, 315° to 350° F.

This enamel may be used where toughness, fabrication, chemical resistance and adhesion are basic requirements. The excellent flow characteristics make it suitable for canisters, lunch pails, cans, caps and closures.

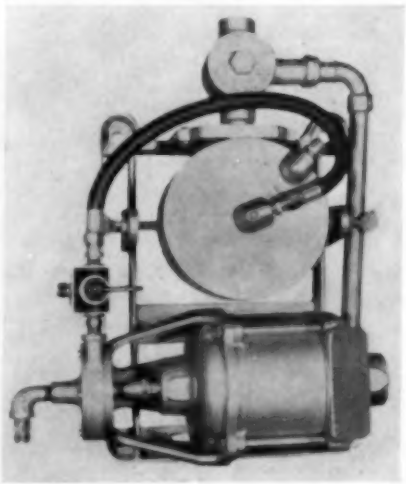
For further information contact Watson-Standard Co., 230 Galveston Ave., Pittsburgh 12, Pa.

For more data, circle 2 on colored card.

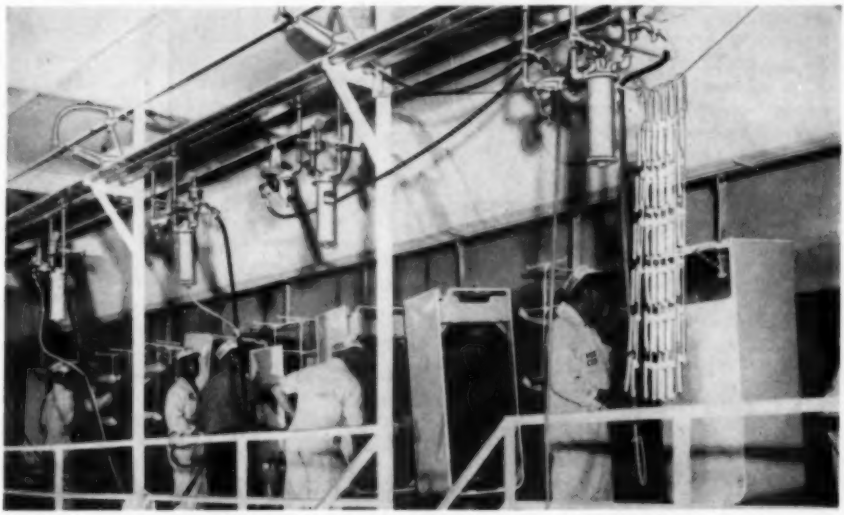
Spee-Flo's New Paint Heater

The uniform viscosity and controlled temperature application of finishing materials with the new Spee-Flo hot spray heater helps to speed up production, reduce wastage of materials, and to improve the quality of all kinds of coating jobs.

According to the manufacturer, finishes can be expected to give bet-



Spee-Flo paint heater and pump.



CUNO FILTERS insure finer finishes at this appliance plant

Better finish, fewer rejects

in spraying and dipping operations

That's why more and more Cuno MICRO-KLEAN and AUTO-KLEAN filters are being selected by the finishing departments of such outstanding firms as Frigidaire, General Electric, Avco Manufacturing and Servel.

MICRO-KLEAN removes fine contaminants from spray paint; oil, moisture and scale from air lines. MICRO-KLEAN is also ideal for periodically cleaning dip tanks of sludge and other foreign particles.

AUTO-KLEANS remove skins, dirt, chips and scale before they harm your finish. Contaminants collecting on strainer are removed without stopping flow — either by motor drive or manual turning of handle.

Let us help *you* get finer finishes at lower cost. Write Cuno Engineering Corporation, Dept. 2915, Meriden, Conn. 4.15

CUNO ENGINEERED FILTRATION

ter coverage and more mileage when used with the coilless Circaflo 300. This new unit combines the merits of a coilless heat exchanger and the newly improved Circaflo pump. The pump has no bearings or close fitting tolerances to wear, and it is driven by a ¼-hp. explosion proof motor.

One coat of heat-reduced high-solids film replaces two coats, for a faster sag-proof application. For more detailed information, write Spee-Flo Corp., Dept. C-12, 720 Polk Ave., Houston 2, Texas.

For more data, circle 3 on colored card.

Cleans Steel Drums Fast

The Industrial Washing Machine Corp., Matawan, N. J., has developed a new washer designed especially for cleaning steel drums.

Drums are carried through the machine on a bar conveyor, while the covers pass through at the same time hanging from an overhead monorail which operates independently. The drums are automatically turned upside down for more efficient cleaning as they enter, and are automatically righted as they emerge. Powerful sprays are located on the sides, top and bottom of the machine to insure a thorough cleaning job.

One model washes and rinses 120 drums an hour. Steam, gas or electric heating systems are available.

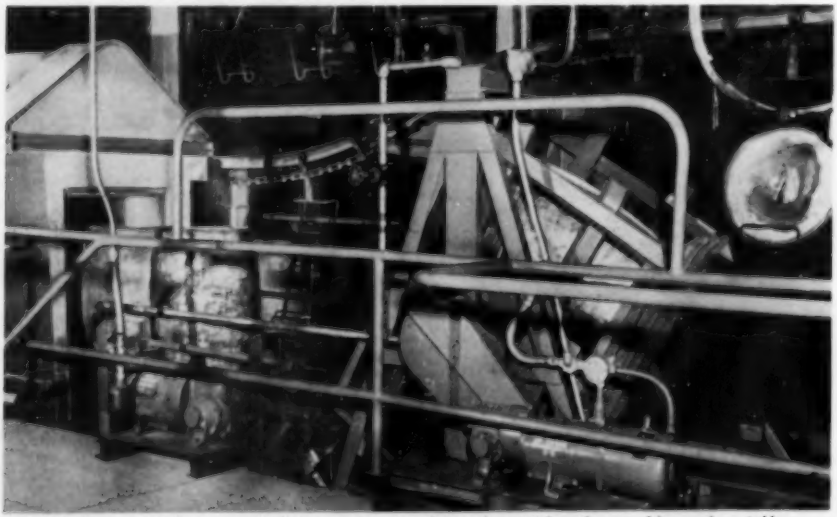
For more data, circle 4 on colored card.

New Type Paint Remover

A new type of paint remover has been developed. Called "Blister-Off," it can be sprayed on the surface. The solution causes hundreds of tiny blisters to form in the paint film, rising completely and cleanly from the surface, ready to be wiped or scraped off. One application is sufficient except for exceptionally stubborn cases. Available in 12-oz. containers. Trouble-free spray heads guaranteed for one year.

For more information, write The Wilbur & Williams Co., 130 Lincoln St., Boston 35, Mass.

For more data, circle 5 on colored card.



Washes steel drums and their covers, inside and outside, thoroughly and quickly.

Have you Considered...

WOOD GRAIN PRINTING
or
ROLLER COATING
for your products?

Here's just the machine that pays big dividends

Only long and thorough experience in the practical finishing and graining field, in cooperation with a competent engineering staff, makes it possible to bring you this dual-purpose machine of unparalleled competence and versatility.

Capable of producing fine, faithful reproductions of a variety of grains or patterns, or operating as a roller coating machine adaptable for base coating as well as top coating, it pays big dividends.

The model H.V.R. #24 machine, as illustrated, is ruggedly constructed, with precision built controls that assure precise adjustments for all operations. Change-over from wood grain printing to roller coating is accomplished in minutes. For wood graining, it is adaptable to almost any kind of production, either completely assembled cabinets or flat stock.

Standard models from 24-in. to 36-in. are adaptable to run in either horizontal or vertical position, with adjustment range of 24-in. in the horizontal position. It is completely automatic in operation through neoprene feeding belt synchronized with the machine. Anyone can operate it without previous experience.

KENT ROTARY EQUIPMENT CO.
1821 Edgecliffe Drive
Los Angeles 26, Calif.

Experienced finishing-graining service man available for installation and to assist in initial production setup.

Left, horizontal position for graining; right, vertical position.

Red Neoprene Coating

A new color has been added to liquid neoprene maintenance coatings. Red is now available in addition to slate black, aluminum and gray. This new color will feature the desired qualities found in other Gaco N-700 coatings. It is thermosetting. It will not soften, run or crack under extreme heat or cold. This coating maintains its flexibility and tensile strength, expanding and contracting with the surface to which it's bonded.

These paints are used as a protection against splash, corrosion and acid fumes.

Further information will be sent if requested from Gates Engineering Co., 100 S. West St., Wilmington, Del.

For more data, circle 6 on colored card.

Catalyst Spray Gun

If you spray catalyst or additive materials you will be interested in the P-JGC spray gun by DeVilbiss. It is built so that *two materials are mixed in the spray pattern after they have both left the gun, and before they reach the surface.* This eliminates the handling problems of quick setting and short pot life.

The catalyst or additive material is admitted into the atomizing air through a metering venturi at the side of the head, becomes thoroughly mixed with the air, and leaves the gun through the center air jets that atomize the stream of basic material.

Catalyst is mixed in spray after material leaves nozzle of gun.

If you are interested in this type of equipment, get in touch with The DeVilbiss Co., Toledo 1, Ohio.

For more data, circle 7 on colored card.

New Epon Resin Curing Agent

Shell Chemical Corp., 50 W. 50th St., New York, N. Y., has developed a new modified amine curing agent. Development work has shown it to be particularly useful in epoxy castings, potting and adhesives and laminating applications where room temperature or moderately elevated temperatures of curing are desired.

This new curing agent can be used with all Epon resins. A data sheet has been prepared and is available upon request.

For more data, circle 8 on colored card.

Stripper; Mix With Water

Econostrip 300, a new powerful paint stripper offers flexibility and custom dilution to meet specific requirements. The manufacturer, Beck Equipment Co., 3350 W. 137th St., Cleveland 11, Ohio, states that the stripper can be diluted with water as much as 300% and still retain sufficient potency to strip a wide range of finishes quickly and completely. The most stubborn finishes, such as Epons and baked enamels, can be removed as easily and cleanly as the so-called easy to remove finishes. It is equally effective when used in a continuous production operation, or from a drum.

Beck will be glad to send an illustrated Bulletin on this and other strippers.

For more data, circle 9 on colored card.

HERE'S *PEAK EFFICIENCY* IN AN *ECONOMICAL* PAINT SPRAY BOOTH

Photo Courtesy General Outdoor Adv. Co., Minneapolis, Minn.

. . . with R P Paint Arrestors, of course!

Here's another example of the easy adaptation of R P Paint Arrestors for economy, efficiency and flexibility in all types of paint spray booth operations. Low in initial and maintenance costs, R P Paint Arrestors save on floor space requirements, reduce down-time. Write for free booklet giving information and suggestions on solving your paint spray booth problems with R P Paint Arrestors.

RP . . . PRODUCTS OF RESEARCH

RESEARCH PRODUCTS CORPORATION

DEPT. 34, MADISON 10, WISCONSIN

CHANGE DRUM TUMBLER

The illustration shows a machine designed to make a churn out of any drum, barrel or small tank for mixing, agitating or blending contents. The change drum feature avoids cleaning delays inherent in the old type barrel tumbler as well as eliminating any possibility of contaminating different products.

Well braced end supports of heavy boiler plate are properly spaced with angle iron, the complete assembly being welded throughout to form a rigid unit sufficiently heavy to absorb the shock of large reciprocating loads.

A detachable crank on end of motor shaft makes it possible to turn yoke to proper angle for drum transfer. During processing of material, power can be cut off and drum turned to horizontal position for sampling contents, adding additional material, or for draining.

Further details and prices on request.

A portable inclined ramp slips loaded drum into yoke with little effort.

THE VOL-U-METER CO., P. O. Box 54, Buffalo 16, N. Y.

Leather-Tex Finish for Metal and Wood Surfaces

Leather-Tex is a remarkable product and new development for imitating a leather texture on wood or metal. Two-tone effects are produced by using either contrasting or harmonizing first and second coats. Available in baking synthetic or new fast-dry lacquer types. Tough, durable, decorative and economical. A product of V. J. Dolan & Co., Inc., 1830 N. Laramie Ave., Chicago 39.

For more data, circle 10 on colored card.

Flexible Tip Blow Gun

Do you have a problem of blowing off light weight, delicate parts where a strong blast of air would blow them off the screen or work holder? The Flex Tip Blow gun is designed for a wide range of industrial and commercial applications.

Controlled by manual flexing of the nozzle, it can be easily manipulated to produce any amount of air, from gentle puffs to strong blasts in any direction. Until the gun is flexed, the entire air line pressure is forced against a fully protected internal valve seat which assures a positive, leakproof seal. Available in ¼-in. or ½-in. sizes.

Further details available from Teglen Engineering Co., 1209 Fair Oaks Ave., South Pasadena, Calif.

For more data, circle 11 on colored card.

Adjusts from gentle to strong blasts.

Chainless Conveyor (Rods)

Announcement is made of the Landahl Conveyor in which solid steel rods replace the usual chain or cable between trolley units. These steel rod connectors pivot at both ends in ball and socket joints anchored within the trolley units.

Short-radius turns, either horizontal or vertical are made without auxiliary traction wheels, sprockets or rollers. The two horizontally mounted wheels negotiate all vertical turns, while the two wheels on the vertical axles automatically come into use on horizontal turns.

Conveyor speeds range from 10 to 25-fpm. Load capacities range up to 100-lbs. per foot of conveyor line.

For more specific data, write Landahl Conveyor Co., 534 Dennison Ave., subsidiary of the American MonoRail Co., 13107 Athens Ave., Cleveland, Ohio.

For more data, circle 12 on colored card.

New Oakite Acid Cleaner

Oakite compound No. 131 is an acid detergent designed primarily for pickling and scale removal. It removes light to moderate rust, heat scale, tarnish and other oxides, as well as normal shop dirt; and to meet specification MIL-M-10578A, Type III.

It is a non-viscous, amber colored liquid product having a pH range of 1.5 to 1.0 at 70° F., and a bulk density of 11-lbs. per gallon. It is soluble in water or alcohol in all proportions, and may be rinsed easily in either hot or cold water. It may be used in a concentration range of 5% to 30% by volume. Recommended operating temperature range from room temperature to 160° F.

Additional information is available from Oakite Products, Inc., 132 F Rector St., New York 6, N. Y.

For more data, circle 13 on colored card.

Strips in Seconds

Remove EPOXY Coatings with

ELECTRO COLD STRIPPER

ELECTRO T415 Strips epon and epon-modified coatings in minutes.

NON-INFLAMMABLE
NON-TOXIC
NON-INJURIOUS

High bake enamels, japans, primers, hammers, 3M products (Scotchlite masking tape, etc.) come off quickly in ELECTRO COLD STRIPPER.
No heat, no current. Reduce costs, occupational hazards and stripping time to seconds or minutes instead of hours.

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Try ELECTRO COLD STRIPPER and save. Order testing sample gratis, 5-gallons at drum price, or forward parts to strip with handling requisites.

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Synthetic Metal Paste-Liquid

Miracle No-Torch cold solder, a synthetic metal, may be applied directly from the can with a putty knife for sealing leaks and making emergency repairs.

It is impervious to moisture and most solvents. It will not crack, chip, peel or shrink, also has great impact and abrasion resistance. May be sanded and filed like metal.

Hydralloy is practically the same as cold solder except that it is in liquid form. It is non-porous and effectively prevents moisture from penetrating to the base metal. May be brushed, dipped or sprayed.

For more information, write A. L. Okun Co., 109-02 Van Wyck Expressway, So. Ozone Park, L. I. 20, N. Y.

For more data, circle 14 on colored card.

Magnetic Coolant Separators

Delpark Industrial Filters offers a new line of Delpark-Dings Magnetic Coolant Separators. Designed for separation of metal particles from coolants, this separator can be used in connection with honing, lapping, grinding, shaving, broaching, milling metal roll forming mills, glass polishing operations and oil reclaiming processes.

Delpark's magnetic coolant separator.

It will remove metal particles from coolant by magnetic attraction. These units may be used independently where partial separation is adequate. They may also be used for pre-filtration separation to reduce the load on the filter. Capacities up to 100-g.p.m. are available.

For complete information, write George L. Guymon, vice president, Industrial Filtration Co., Dept. D-318, Lebanon, Ind.

For more data, circle 15 on colored card.

Lacquer Keeps Brass Bright

Keeping brass bright and shiny is a problem. How about your product?

A clear lacquer, L-1943 is now available. It is adaptable to dip, brush or spray application, and will dry to touch in a few minutes; has excellent adhesion without special treatment of the brass; is water pale clear, and will not yellow with age.

Want more information? Or a sample to try? Someone to talk over your brass finishing requirements? Write The O'Brien Corp., South Bend 21, Indiana.

For more data, circle 16 on colored card.

Cleans Compressed Air

A new Model 5 Vi-Speed Dehumidi-Filter for compressed air systems is now available. It fulfills the requirements for a highly efficient low volume filter on instrument and tool air lines.

By removing all contaminants, including oil and water vapors, it assures efficient operation of the instruments or other low volume pneumatic equipment and reduces maintenance cost. Life of all pneumatic equipment is thereby increased.

Units and methods are described in a brochure available from Van Products Co., 5744 Ridge Rd., Swanville, Erie 7, Pa.

For more data, circle 17 on colored card.

LOW COST THINNERS

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- **FORMULATED TO MEET ANY SPECIFICATION**
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Shipped in our own Tank Trucks, Drums or 5 gal. Cans

Synthetic Reducers and Retarders

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- **LOW COST**
- **COLD SPRAY**
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- **MAR RESISTANT**

Stop "Fish Eyes" and Craters with
SILICONE LOCK-SEAL 1X3

When refinishing furniture, cabinets or woodwork where a Silicone finish or Silicone furniture polish has been applied, apply a barrier coat of SILICONE LOCK-SEAL 1X3, because . . .

Silicones penetrate through the finish into the wood grain. If not locked in and sealed, the minute particles of Silicones cause craters or "fish eyes" in all top coats.

LOCK SEAL 1X3 can be used under lacquers, varnishes, shellacs, enamels and paint. Can be applied by spray or brush.

To be sure, only SILICONE LOCK-SEAL 1X3 can do this job.

Write for complete information.

Manufactured Exclusively by

H. BEHLEN & BRO., INC.

8 CHRISTOPHER ST., NEW YORK 14, N. Y.

West Coast Branch: 1755 Berkeley St., Santa Monica, Calif. Factory: Kearny, N. J.

Two New Metallic Tapes

Two new pressure sensitive tapes, each having great strength, although only 2-mils thick, are available for industrial marking, labeling and decorating use by Minnesota Mining & Mfg. Co., Dept. P-522, 900 Fauquier St., St. Paul 6, Minn.

The tapes, Scotch brand polyester film tapes Nos. 850 and 852, have similar physical characteristics and metallic (silver) appearances. Each has a polyester film backing which is resistant to heat and chemicals.

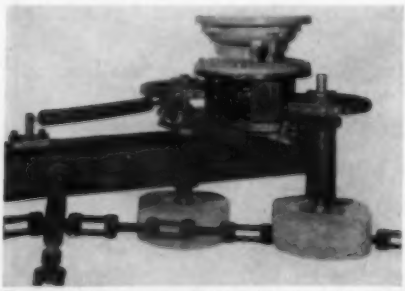
These tapes are available in ¼ to 23-in. widths on 72 yard rolls. Sample ¾-in. by 3-yard rolls are available on request from the 3M Co.

For more data, circle 18 on colored card.

Brushes Clean Overhead Chain Conveyor

Dust and dirt that sticks to the surfaces of hard-to-reach overhead conveyor chains can be automatically removed by a new conveyor chain brusher designed and built by the Fuller Brush Co., Machine Division, Hartford 2, Conn.

Danger of any spoilage of work in process, from the dropping of accumulated dirt, is eliminated by two sets of Fullanchor wheel brushes which represent a new improvement in brush design.



For continuous or intermittent automatic cleaning of overhead conveyor chains.

The unit is mounted on the monorail supporting the chain conveyor. The two brushes, powered by a 1-hp. motor, pivot on the motor base and bear against the conveyor chain. The brushes can be swung away from the chain if only intermittent cleaning is desired.

For more data, circle 19 on colored card.

Laboratory Shaker-Mixer

The Gyroblend multiple bottle shaker is designed to provide speed and efficiency in general laboratory mixing. By combining vertical and horizontal motions to obtain a "wrist shaking" action, materials are thoroughly mixed in the shortest possible time. Power is supplied by friction-type drive and full ¼-hp. electric motor. It is available in three types.

For more details, write Gardner Laboratory, Inc., 4723 Elm St., Bethesda 14, Md.

For more data, circle 20 on colored card.

Corrosion Resistant Compound

A new corrosion resistant neoprene lining compound that flows like paint is now available. The product, called "Pennsalt Neoline," combines the corrosion inertness of neoprene with excellent strength and adhesion. Neoline cures completely to a live, resilient vulcanized coating for full protection for metal, concrete or wood where a heavy duty coating or lining is required.

It can be heat cured or air cured, and is suitable for use on fan blades, fume ducts, process vessels, pump impellers, valves, piping and tanks.

Tests show a wide range of resistance to corrosives up to 200° F.

Complete specifications are available from the Corrosion Engineering Dept., Pennsylvania Salt Mfg. Co., 1000 Widener Bldg., Philadelphia 7.

For more data, circle 21 on colored card.

Functional Finishes!

If you require your coatings to accomplish some specific task — something beyond mere ornamental appearance or average longevity . . .

We make ACRYLIC, ALKYD, CELLULOSIC and VINYLOID coatings for a very wide range of specialized industrial applications.

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TR 3-2100

Heavy Duty Sander-Grinder

A new 9-in. heavy duty sander-grinder with more power but lighter in weight than previous models has been developed by Black & Decker Mfg. Co., Towson 4, Md.

A new type centrifugal fan provides a cool-running motor, and keeps the motor free from dust.

For more data, circle 22 on colored card.

Self-Sticking Accident Signs

Self-sticking accident prevention signs in three standard sizes are now available from W. H. Brady Co., 727 W. Glendale Ave., Milwaukee 12.

The signs include basic purpose accident prevention signs, caution, information, directional, safety instruction and radiation hazard signs in wordings and colors specified by American Standards Association Std. Z-35.1-1941.

These signs are made of Brady B-500 all-temperature impregnated cotton cloth with a temperature resistant, pressure sensitive adhesive. Each sign is mounted on its own dispenser card.

Write for the 16-page Bulletin 145-C in color and a free sample to the company.

For more data, circle 23 on colored card.

Humidity Testing Cabinet

For research and testing laboratories a versatile and accurate temperature-controlled relative humidity cabinet, known as Vapor-Temp is now available.

It has 100% accessability and visibility, eight point hermetically sealed lead-in terminals and adjustable air flow. Relative humidity may be controlled from 20% to near saturation at any point, depending upon dry bulb temperature. The cabinet has an inverted Pyrex jar as the work chamber.

For more information, write Blue M Electric Co., 138th & Chatham St., Blue Island, Ill.

For more data, circle 24 on colored card.

Adhesive Requires No Heat or Pressure

The Adhesive Products Corp., 1660 Boone Ave., New York 60, N. Y., announces the development of an improved contact adhesive, Stix, which makes it possible to laminate Formica, Micarta, Consoweld, Panelyte, etc., to wood without the use of any heat or pressure.

With Stix, the surfaces to be adhered are allowed to dry for 30 minutes. When the cement is dry, the coated surfaces are placed in contact with each other, resulting in an instantaneous bond which cannot be separated. It is so formulated that the bond improves with age, and also is heat resistant.

For more data, circle 25 on colored card.

It's Kelite Corporation Now

The integration of the several Kelite corporations operating in the U.S.A. was completed April 1, 1955 when the stockholders of Kelite Products, Inc. of Illinois accepted a plan for exchange of shares. The combined organization is incorporated in California as Kelite Corporation, with L. C. Sorensen, founder of Kelite as President, and W. G. Nuelsen, former president of the Illinois corporation as Senior Vice President.

William Sorensen is Executive Vice President with headquarters in New York.

There will be no change in personnel in the 98 U. S. offices maintained by the chemical and equipment firm.

Kelite of Canada and Kelite of Mexico will continue to operate independently.

For Your Convenience

Use INDUSTRIAL FINISHING magazine's "Reader Service" return cards to obtain further information on products described and illustrated in the "Materials; Supplies; Equipment" section which precedes this page; also, to receive manufacturers' literature — booklets, catalogs, circulars — as mentioned on the following pages.

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Manufacturers' Literature

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Exposure Tests. Actual weathering, corrosion and sunlight tests direct and under glass for quick predetermination of durability and permanency in southern Florida by South Florida Test Service, 4201 N. W. 7th St., Miami 34, Florida. Full information available.

For more data, circle 26 on colored card.

Why Hot Spray? is the title of an informative booklet of 14 pages recently published by the Spee-Flo Corp. It's free. Write the company at 720 Polk Ave., Houston 2, Texas. General information and a question and answer section cover the wide range and efficiency of the new Spee-Flo Hot Spray Heaters.

For more data, circle 27 on colored card.

Oven Catalog, 16 pages. A new catalog on industrial ovens. A special section is devoted to finishing ovens. Free upon request. The Lanly Co., 750 Prospect Ave., Cleveland 15, Ohio.

For more data, circle 28 on colored card.

Ovens: Speed, Economy, Safety. A new Industrial Ovens report covers design of industrial ovens with special consideration given to safety. Discusses ovens used in continuous process systems, such as coating, drying and curing. Industrial Ovens, Inc., 13825 Triskett Road, Cleveland 11, Ohio.

For more data, circle 29 on colored card.

Blond Finish Easy. Your "Blond" finish problem is answered permanently by V. J. Dolan & Co., 1830 N. Laramie Ave., Chicago 39, Ill. No darkening or yellowing of finish. Dolan's 1454 Water White Sealer and 3740 Water White Lacquer are guaranteed to produce permanent and crystal clear coatings.

For more data, circle 30 on colored card.

Flowcoat Finishing. An 8-page bulletin (No. 13) 8½x11-in. printed in two colors and illustrated, contains a clear and informative explanation of how to apply prime coating and finishing materials rapidly, economically and uniformly by the flowcoating process. For free copies, write to DuPont Finishes Division, Room 7145-D, Wilmington 98, Dela.

For more data, circle 31 on colored card.

Electrostatic Spray Painting. How it saves paint, time, handling and labor through uniform automatic operation, can be learned by writing to Ransburg Electro-Coating Corp., Indianapolis 7, Ind.

For more data, circle 32 on colored card.

Industrial FINISHING

May, 1955, Issue

READER SERVICE DEPARTMENT

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Signed.....*Title*.....

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Street Address.....

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Specialized Metal Coatings, plus laboratory and field technicians. Watson-Standard Co., 225 Galveston Ave., Pittsburgh 30, Penna.
For more data, circle 33 on colored card.

Radiant (Electric) Ovens heat fast and economically as dry-off and bake ovens. A free book tells "How Thousands of Plants Cut Costs". The Fostoria Pressed Steel Corp., Dept. 321, Fostoria, Ohio.
For more data, circle 34 on colored card.

Ross Industrial Ovens. Facts about comparisons of quality versus cheapness, offered by J. O. Ross Engineering Corp., 444 Madison Ave., New York 22, N. Y.
For more data, circle 35 on colored card.

Iridite; Corrosion Protection of aluminum, zinc, copper, magnesium; dip or spray; simple and easy without heat. Allied Research Products, Inc., 4004 E. Monument St., Baltimore 5, Md.
For more data, circle 36 on colored card.

Paints, Lacquers, Sealers, all tested for accuracy and uniformity, etc. Finishing problems solved. Tousey Varnish Co., 520 W. 25th St., Chicago 16, Ill.
For more data, circle 37 on colored card.

Dip Tank Finishing. Hand dipping, conveyor dipping and automatic dipping are included in information revealed in a new 8-page illustrated bulletin (No. 12) 8½x11-in., printed in two colors. Copies are free. DuPont Finishes Division, Room 7145-D, Wilmington 98, Delaware.
For more data, circle 38 on colored card.

Patching Knife Heaters quickly heat knives for "burning-in" operations. Will operate continually without over-heating or burning out Available in two different types and voltages from 110 to 220 volts. Op-Al Electric and Mfg. Co., 809 N. Senate Ave., Indianapolis 7, Ind.
For more data, circle 39 on colored card.

Savings in Cleaning, Finishing are revealed in reports of concerns that are using equipment designed, manufactured and installed by Cincinnati Cleaning & Finishing Machinery Co., Inc., 2006 Hageman St., Sharonville, Ohio.
For more data, circle 40 on colored card.

Brilliant Colors plus lasting durability are characteristic of Kem Lustral custom-quality enamels (air dry or bake; dip or spray) for a variety of metal and wood products—and for maintenance too. More information is offered by The Sherwin-Williams Co., General Industrial Division, Cleveland 1, Ohio.
For omre data, circle 41 on colored card.

Tests and Technical Service are included with finishing materials offered by the Industrial Finishes Division of The Glidden Co., 11005 Madison Ave., Cleveland 2.
For more data, circle 42 on colored card.

Radiant Heat Story of production speed and savings in oven drying (prime coat and finish) and Bonderizing unit, has facts that will interest you. The company offers air make-up units, spray booths, washers, ovens, heaters, and complete finishing systems. Burdett Mfg. Co., 3425 W. Madison St., Chicago 24, Ill.
For more data, circle 43 on colored card.

Wiping Stains. New scientifically balanced, rapid drying, transparent and semi-transparent colors, excellent uniformity, air dry in two hours. They are called Mac's Dura-Plas Wiping Stains by The Lawrence-McFadden Co., 7430 State Road, Philadelphia 36, Penna.
For more data, circle 44 on colored card.

Coated Abrasive Selector helps you to choose the proper sandpaper for every job. Write The Carborundum Co., Dept. IF-82-54, Niagara Falls, N. Y.
For more data, circle 45 on colored card.

Flow Coating. What can be accomplished by flow coating your product, can be determined by having samples run through a pilot plant, using a specially formulated flow-coat material. This service is offered by Reliance Varnish Co., Inc., 4730 Crittenden Dr., Louisville 9, Ky.
For more data, circle 46 on colored card.

Smaller Mix-Pressure Tank. Tanks as small as one, two or 4-quart, with air-motored agitator, for use when spraying a small quantity of material at a time, changing colors frequently, testing, etc., are offered by Eclipse Air Brush Co., 400 Park Ave., Newark 7, N. J.
For more data, circle 47 on colored card.

Duotone Enamel for sheet metal products; a modified alkyd resin type enamel; bakes fast; is mar-resistant; one coat on bare metal. The full story is offered by The Lowe Brothers Co., Industrial Division, Dayton 2, Ohio.
For more data, circle 48 on colored card.

Strips Build-up off Hooks. A bulletin that tells you about a system of easily and quickly stripping off built-up paint, enamel or lacquer from iron or steel hooks and racks, is offered by Kolene Corp., 12890 Westwood Ave., Detroit 23, Michigan.
For more data, circle 49 on colored card.

A Peel-off Coating is called "Liquid Envelope" because it can be sprayed on to form a firesafe strippable coating. One use is for coating the interiors of spray booths; this temporary coating catches all overspray; when loaded it is peeled off, disposed of, and the clean metal surfaces are re-coated. Better Finishes & Coatings, Inc., 268 Doremus Avenue, Newark 5, N. J.

For more data, circle 50 on colored card.

Protective, Decorative Finishes for every need are offered by the Rockford Varnish Co., Rockford, Ill.

For more data, circle 51 on colored card.

Lyfanite, a Phosphate Coating that assures excellent paint bonding, plus resistance to corrosion, is made by the manufacturer of Metalprep and other Prep products. "A" is for aluminum alloys; "Z" is for iron and steel. Bulletin 55-133, giving complete facts and details, is offered free by Neilson Chemical Co., 6562 Benson St., Detroit 7, Mich.

For more data, circle 52 on colored card.

Airless Spray Painting (no compressed air); spray hot material by hydraulic pressure; no overspray; no health hazards; less thinner; uniform viscosity; more coverage per gallon; adaptable to both product and on the job maintenance painting. Bede Products Corp., Jackson St., Amherst, Ohio.

For more data, circle 53 on colored card.

Power Sanding and Rubbing by a dual-pad portable machine driven with compressed air. Straight line sanding or orbital motion; so easy to use that women can operate it; offers safety, speed, effectiveness and economy. National Air Sander, Inc., 2820 Auburn St., Rockford, Illinois.

For more data, circle 54 on colored card.

Flock Finishes in a variety of colors, for decorative effects, lining, bases, sound deadening and many other uses, are offered by Claremont Waste Mfg. Co., Claremont, N. H. Samples, color cards, details free.

For more data, circle 55 on colored card.

Paint Arrestors, positioned in back of spray booths, catch flying overspray, screen it out of exhaust air stream and thereby save exhaust fans, duct work and neighborhood from slow coating by an escaping mist of waste paint spray. A free booklet tells more about them. Research Products, 1015 E. Washington Ave., Madison 10, Wis.

For more data, circle 56 on colored card.

Metal and Wood Finishes in variety and fine quality are featured by New York Woodfinishers Supply Co., Inc., 109 Imlay St., Brooklyn 31, N. Y.

For more data, circle 57 on colored card.

Strips in Seconds. Fast work with Electro Cold Stripper; even takes off Epoxy coatings; safe to use. Allied Finishing Specialties Co., 2641 W. Grand Ave., Chicago 12, Ill.

For more data, circle 58 on colored card.

Sparkling Multi-Color Finishes, under the trade name of Poly-Hue, are announced by the American Lacquer Solvents Co., Phoenixville, Pa. Poly-Hue is a color-flecked textured enamel available in many standard blends, two to four colors each, which sprays on in one application. It bonds firmly to metal, wood or plastic. Descriptive literature may be had upon request.

For more data, circle 59 on colored card.

For Mixing, Agitating or Blending contents of a drum, The Vol-U-Meter Co., P. O. Box 54, Buffalo 16, N. Y., directs attention to its "change drum tumbler" which is designed to make a churn out of any drum, barrel or small tank. Illustrated literature is available.

For more data, circle 60 on colored card.

Chainless Conveyor, manufactured by The Landahl Conveyor Co., 13122 Athens Ave., Cleveland 7, Ohio, makes short-radius turns, horizontally and vertically. It has no chains or cables to kink, sag or pile up . . . . no excess slack to cause jerky action. Bulletin G-100 illustrates and describes this conveyor and its adaptation to many finishing department's requirements for efficient and speedy transportation of products in process.

For more data, circle 61 on colored card.

For Stripping Epons, Beck Equipment Co., Cleveland 11, Ohio, features "Econostrip," a material that is claimed to be remarkably effective. Also used for stripping lacquers, enamels and other tough finishes. Rinses easy; leaves no stripper scum. A bulletin on the Beck Econostrip is free.

For more data, circle 62 on colored card.

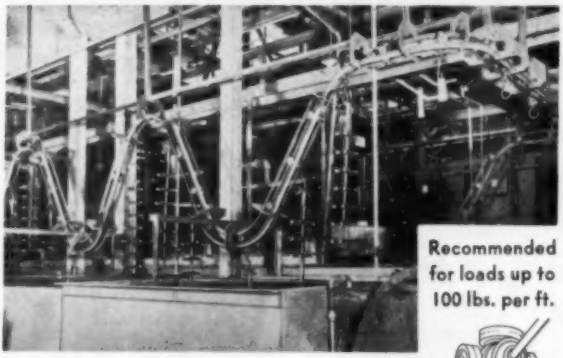
Surface Finishing Machines. The Clair Model 202, one of the many Clair basic models, has double roll which assures uniform and simultaneous coverage of both sides at any predetermined buffing pressure, over flat or contoured surfaces. Literature upon request.

For more data, circle 63 on colored card.

CHAINLESS CONVEYOR Makes Short Turns

"Roller Coaster" Solves Dip-Tank Operation

Short-radius "roller-coaster" dips and turns like those at right show advantages of Landahl CHAINLESS Conveyors. They permit short-radius turns, horizontally and vertically. No chains or cables to kink, sag, or pile up . . . no excess slack to cause jerky action. Steel-rod connectors pivot at both ends on self-lubricating ball-type universal joints. Unique trolley design is lighter, less bulky, yet meets any practical load-bearing need!



Recommended for loads up to 100 lbs. per ft.

LANDAHL **Chainless** CONVEYORS

Write for Bulletin G-100

The LANDAHL CONVEYOR CO., 13122 Athens Ave., Cleveland 7, Ohio
A SUBSIDIARY OF THE AMERICAN MONORAIL COMPANY

Super Spray Cleaning and Rinsing, plus fast drying are features of a new machine for washing aluminum and steel sheets. A free 28-page folder reveals information and shows pictures of this and other product cleaning machines. The Alvey-Ferguson Co., 727 Disney St., Cincinnati 9, Ohio.

For more data, circle 64 on colored card.

Specialized Production Coatings and finishes for a variety of products, including aircraft finishes, are offered by Randolph Products Co., Carlstadt, N. J.

For more data, circle 65 on colored card.

Filters to Clean Your Paint and the compressed air used to spray it, are products many large companies use. One is called Micro-Klean; the other is Auto Kleans. They are used for dip tanks and flow coating setups too. Cuno Engineering Corp., Dept. 29, Meriden, Conn.

For more data, circle 66 on colored card.

Ovens, Large or Small, batch or conveyorized, designed and engineered to meet specific requirements, are described and illustrated in a free booklet offered by Kirk & Blum Mfg. Co., 3131 Forrer Ave., Cincinnati 9, Ohio.

For more data, circle 67 on colored card.

Plastisol Coatings in many different formulations (rich in color; satin luster; chip-proof; resilient; shock absorbing, etc.) for metals, are offered by United Chromium, Inc., 100 E. 42nd St., New York 17, N. Y.

For more data, circle 68 on colored card.

Hot Lacquers for metal, plastics and wood; 30% to 40% solids; produce smooth uniform films that are resistant to water, alcohol, cold checking, printing and marring. Titanine, Inc., Morris & Elmwood Aves., Union, N. J.

For more data, circle 69 on colored card.

Wood Graining Machines, vertical rollers or horizontal rollers for graining panels, sheet stock or assembled cabinets; semi and fully automatic, by a manufacturer of more than 30 years experience. Hamant Tool Co., 2916 E. 2nd St., Dayton 3, Ohio.

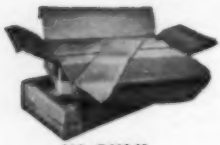
For more data, circle 70 on colored card.

Furniture Finishing Systems that offer labor savings up to 50% and floor space savings up to 30%—more than 140 such installations in small to large plants—are claimed by George Koch Sons, Inc., Evansville 4, Indiana.

For more data, circle 71 on colored card.

For Dust Free Finishes!
BOND TACK CLOTH

IN ROLLS
Cut off any size piece to use as needed.



IN BULK
Cut and folded. Ready to use.

STAYS SOFT AND TACKY
A SPECK-FREE FINISH EVERYTIME

Now Available in Rolls or Cut Bulk—White or Gold. In Three Different Types of Cloth

Get your Tack Cloth packed just the way it's easiest for you to use . . . either in 150 yard rolls of 36" wide cloth or in handy cartons . . . 100 or more Tack Cloths to the carton.

No matter which way you buy it, you can be sure that every square inch will stay SOFT and TACKY until the very last bit is used up!

The Cut Bulk size is 18" x 36" . . . folded to 4½" x 18" for ease of handling. ALL BOND TACK CLOTH is **Spontaneous Combustion Proof, Lint-Free** and **Wax Free.** Gives a sparkling speck-free Finish **every time.** Clean and sanitary. No waste.

TRY THEM and COMPARE RESULTS.
Samples Gladly Sent Upon Request.

BOND CHEMICAL PRODUCTS CO.
"The Tacky Wiper Specialists"
2541 N. CLYBOURN AVE. CHICAGO 14, ILLINOIS

Also Individually Packed in Glassine Envelopes—144 to the Carton

A Warranty of Satisfaction in Every Carton

Flock for Surface Coating. Many types of flock for functional and decorative applications are described in a folder issued by Rayon Processing Co. of R. I., Pawtucket, Rhode Island.

For more data, circle 72 on colored card.

Furniture Finishes. A complete line of quality materials (stains to top coat lacquers) plus specialized service, is offered by Snyder Bros., P. O. Box 548, Toccoa, Georgia.

For more data, circle 73 on colored card.

Lacquers and Thinners for the Northeast part of U. S.; laboratory controlled. I-Sis Chemicals, Inc., Springdale, Conn.

For more data, circle 74 on colored card.

Chlorothene Cleaning Solvent is used cold; no fire hazard; only 1/20 as toxic as carbon "tet"; high solvency; rapid drying. The Solvents & Chemicals Group, 2540 W. Flournoy St., Chicago 12, Ill.

For more data, circle 75 on colored card.

Automation-Line Savings, but with hand-crafted quality, is offered in furniture and cabinet finishing by DeBurgh Conveyors, Inc., 10 S. 11th Ave., Evansville, Ind.

For more data, circle 76 on colored card.

D.P.-Tested Furniture Finishes. Every batch of an IC Furniture Finish, made by Interchemical Corp., Newark, N. J., is tested by a new instrument to determine its cold-check resistance (or distention potential). Full information about this testing procedure is available.

For more data, circle 77 on colored card.

One Coat Hammer. Barrett Varnish Co., Cicero 50, Ill., directs attention to its Barcoloid one-coat hammer finish which is available in 25 standard colors; also special colors to match customers' requirements. Barcoloid is recommended to cover rough metal and is used on such items as vending machines, vacuum cleaners, heaters, ovens, phonograph mechanisms, etc.; either air dry or bake. Full information, data sheet and color range sent on request.

For more data, circle 78 on colored card.

Wood Grain Printing or roller coating is accomplished on a new dual-purpose machine being offered by the Kent Rotary Equipment Co., 1821 Edgecliffe Drive, Los Angeles 26, Calif. It produces fine, faithful reproductions of a variety of grains or patterns, or operating as a

roller coating machine it is adaptable for base coating as well as top coating. The change-over from wood grain printing to roller coating is accomplished in minutes. Descriptive literature is available.

For more data, circle 79 on colored card.

How to Clean Metals in Aircraft Production is the title of a 48-page illustrated booklet issued by Oakite Products, Inc., New York 6, N. Y. It describes cleaning aluminum, steel and magnesium; stripping paint (solvent or hot tank); deoxidizing aluminum; deflocculating paint in spray booths; preparing metal for painting; removing scale and corrosion; preventing corrosion. Booklet is free.

For more data, circle 80 on colored card.

Effective Skin Protector and cleaner. The Chemical Corp., Springfield, Mass., announces Practi-Kreme, which may be applied to the hands before work to provide a flexible, fat-based coating over the skin. Moistened and rubbed to a lather after work, Practi-Kreme removes paint, lacquer, etc., without skin-irritating solvents. Free sample on request.

For more data, circle 81 on colored card.

Baking and Drying Ovens. Young Brothers Co., Cleveland 13, Ohio, announces a single compartment, roller conveyor, tunnel-type oven with lift doors at each end. It serves to solve one of the numerous paint drying and baking problems encountered in many plants. Bulletin 4 gives complete details.

For more data, circle 82 on colored card.

Vinylite Wash Primer (dip, flow coat or spray) is claimed to equal phosphate coatings for surface preparation. Air dries in one minute. This is only one of many coatings offered by John L. Armitage & Co., 245 Thomas St., Newark 5, New Jersey.

For more data, circle 83 on colored card.

Handling Filled Drums is easy with the "Rock-A-Drum" offered by Morse Mfg. Co., 763 W. Manlius St., E. Syracuse, New York. One man can easily and safely pick up a drum, tilt it, transfer it and position it vertically or horizontally.

For more data, circle 84 on colored card.

Recover and Save Used Solvents, thinners from wash thinners, spoiled lacquers, degreasing machine sludge, etc. Two related companies offer this service: Solvents Recovery Service, Inc., 1025 Broad St., Newark 2, N. J., and Hammond Solvents Recovery Service, 241 Brunswick St., Hammond Ind.

For more data, circle 85 on colored card.

Casket Finishes, including primers for excellent adhesion and less sanding; and lacquers for needed build and easy rubbing, are offered by Cincinnati Varnish Co., Cincinnati 12, Ohio.

For more data, circle 86 on colored card.

Sea-Lac Epon Finish. Duralac Chemical Corp., Newark 5, N. J., announces this new finish, the chief features of which are its remarkable resistance to abrasion, alkalies, acids and perspiration; has good adhesion; sheet metal can be formed after the coating has been applied and baked. Duralac will formulate an Epon finish for any particular use. Details upon request.

For more data, circle 87 on colored card.

A Graining Machine that operates in both vertical and horizontal positions is being featured by the Roto Finishing Systems, 1105 East Glencoe Ave., Compton, Calif. Other Roto Graining models include vertical and horizontal edge banders, horizontal 50", and horizontal self-drive for heavy paper or metal in rolls.

For more data, circle 88 on colored card.

Silver Lacquer for plated goods, silver nitrate films, holloware, cellulose acetate butyrate plastic, vaporized metal coatings, etc., is offered by G. J. Nikolas & Co., Inc., 2850 Washington Blvd., Bellwood, Ill. 2105 Silver Lacquer is fast-drying, water white, crystal clear, non-discoloring, has excellent adhesion and provides mar-resistant hardness.

For more data, circle 89 on colored card.

Multakolor—One-spray coat. A product of United Lacquer Mfg. Corp., Linden, N. J. Multakolor is a one-spray coat material which gives a textured finish of two or more colors. Can be used on any surface—wood, composition board, wall board, beaver board, asbestos board, paper, gypsum, Masonite, ferrous and non-ferrous metals, etc.

For more data, circle 90 on colored card.

Production-tested Chemicals by the Northwest Chemical Co., 9310 Roselawn, Detroit 4, Mich., include LO-HI pH for cleaning prior to plating, painting or vitreous enameling; Alkalume for preparing aluminum for finishing and spot welding; Interlox for phosphate coating; Spray-Lube to control over-spray of paints in water-wash spray booths; Paint Strippers.

For more data, circle 91 on colored card.

Industrial FINISHING Editorial

Those New Things May Make Profits for You

★ Concerns that apply protective or decorative coatings to their products, or to the products of other companies, have an obligation, first, to the industries they serve and second to the buying public. The finishing operation is the last in a series of manufacturing steps. The results produced go a long way toward determining the salability of the products. Reduction of finishing costs and resultant reduction of final consumer prices are important steps in the maintenance of a free enterprise economy.

In recent years, with faster baking equipment and shorter baking cycles required by the newer materials, it does appear that advantages of industrial finishing technology have not been fully utilized.

In all industries today, one can find the changes being accomplished in the search for more automatic methods of operation. The term "automation" is an accepted everyday term in the manufacturing industries. But too often the management of small and medium sized concerns waits for the giant manufacturing establishments to set the trend in trying new equipment and new products.

Progress in the research and technological aspects of industrial finishing can only be continued if forward looking men are willing to adopt the products and methods devised. Some will, of course, not be feasible in certain operations. That is to be expected. However, careful study should always be made of every new process. Only by progressive evaluation of these new procedures can the finishing industry fulfill its obligations.—*N.I.G.*

Blond Finishes Can Stay Blond

★ With the increased use of light-colored furniture the problem of keeping the blond finish light in color has received increased attention. Recent developments and information have helped to solve this problem.

The major cause of the darkening of light-colored furniture is the ultraviolet portion of sunlight. The lacquer on the wood, the wood itself, or both can darken. While a few woods such as black walnut and white oak, actually bleach with age, most woods will darken. This darkening proceeds to a certain level of intensity, after which no further change occurs.

Furniture lacquers today can be formulated with great resistance to discoloration by heat or sunlight. For furniture to have adequate color retention, the wood under the finish must also be prevented from darkening. This darkening of the wood can be retarded by incorporating an ultraviolet light absorber in the lacquer (usually about 0.5% based on lacquer solids).

★ *Guest Editorial . . . Many readers can write an excellent editorial—two or three paragraphs that present a timely suggestion or valuable idea which will stimulate thought on a live subject. The Editor welcomes guest editorials and pays for those used.*

IT'S NEW PERIOD

AGAIN...and AGAIN...and AGAIN

When a production finish is reordered it means customer satisfaction. When it is reordered over and over again, that means customer enthusiasm. Yes, our customers are enthusiastic over these better looking . . . long lasting . . . easier to apply finishes.

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- Lacquers—Clear and Semi-Gloss
- Sealers
- Lacquer Enamels—Flat and Gloss
- Synthetic Enamels

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Write for 5 Gallon Working Sample at Drum Price

MANUFACTURERS OF FINE WOOD AND METAL PRODUCTION FINISHES

Established 1917

NEW PERIOD Production Finishes

NEW YORK WOODFINISHERS' SUPPLY CO., INC.

109 Imlay Street Brooklyn, N. Y.

The ultraviolet light then does not reach the wood, which is markedly more color stable than it would be without the protection of the ultraviolet light absorber in the lacquer.

Another factor that can contribute to the discoloration of light wood finishes is the rubbing oil used in rubbing and polishing furniture. Laboratory work has shown that *some of the cheaper commercial rubbing oils can stain or discolor blond finishes.* This discoloration may not be noticeable until the finish is exposed to sunlight. In a few days a pronounced yellowing occurs. It has been found that highly refined, heavily acid treated, white oils do not show this yellowing tendency. These oils are more expensive than conventional lubricating oils, however.

While the problem of keeping light-colored wood finishes light is by no means completely solved, the lacquer formulator and finishing foreman have more technical information available today than they had a few years ago. More color stable blond wood finishes are the result.—*E.V.G.*

Don't Slight Flash Dry Before Baking

★ Most baking enamel manufacturers recommend a brief period of air drying (flash dry) just before baking. Since the majority of baking finishes use the slower evaporating type solvent in the naphtha or mineral spirits class, the few minutes of air-drying recommended allows the enamel coating to flow and smooth out. It also allows a good portion of the solvent to evaporate.

All too often this vitally important preliminary air drying period is omit-

BOOKS
On Finishing Available

"ORGANIC PROTECTIVE COATINGS," (386 pages) $7.50

"PROTECTIVE COATINGS FOR METALS," (643 pages) 12.00

"ORGANIC COATING TECHNOLOGY," Vol. 1 ..... 10.00

"FLOW COATING," (296 pages) new.. 6.50

"CHEMICAL FORMULARY" (Vol. IX) 7.50
(Preceding Volumes also available, same price)

"FINISHING METAL PRODUCTS"—2nd edition (352 pages) 6.50

"PRACTICAL FURNITURE FINISHING" (112 pages) 1.75

"FURNITURE FINISHING" (543 pages) 5.00

"SPRAY PAINTING"—Industrial and Commercial (169 pages) 2.50

"COLOR DECORATION AND DESIGN" (200 pages) 3.00

"THE MIXING OF COLORS AND PAINTS" (292 pages) 3.00

"WOOD FINISHING" (361 pages) 3.00

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"METALLIC AND NON-METALLIC COATINGS FOR GRAY IRON" (76 pages) 1.75

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ted or shortened. As a result the finished product does not have that smooth glasslike appearance which is expected of a good bake finish. At times, small blisters may appear, having been formed by unevaporated solvent which is trapped in the coating. This may be particularly true in heavy films.

If shortening of the air drying period before baking is a production necessity, the paint manufacturer should be informed, so that the solvent combination may be adjusted in order to produce uniformly smooth coatings.—*Norman I. Gaynes.*

M & E Buys Kellogg Division's Paint Spray Line

The purchase of the paint spray business of Kellogg Division of American Brake Shoe Co. is announced by Rudolph Egener, president of the M & E Mfg. Co., Indianapolis, Ind. The purchase included all patents, designs, tools, equipment and material connected with the Kellogg - American paint spray line. No real estate was involved.

Rudolph Egener

All Kellogg paint spray facilities are to be transferred to the M & E home office and factory in Indianapolis and all manufacturing, sales and service will be handled from the home office. M & E will continue to serve the large volume of automotive business held by the Kellog Division paint spray line.

Mr. Egener, in announcing the purchase, stated that M & E Mfg.'s activity and concentration in the paint spray field and its past business association with the Kellogg Division made M & E the logical manufacturer to assume this line.

M & E, founded in 1911, has been a producer of paint spray equipment since 1922. It is a major producer of commercial and industrial paint spray equipment and has designed and fabricated

paint spray booths and sheet metal accessory equipment for the Kellogg Division. aircraft, truck trailer painting and numerous large, small and difficult paint applications.

T. L. McCorkle, General Manager and C. Edward Andrews, Assistant Sales Manager, now serve as advisory on policy, supervisory and direction.

Johnny Law Returns To Andrew Brown Co.

Richard "Johnny" Law has been appointed trade sales manager by Andrew Brown Co. to replace Bob Patterson who has transferred to the company's industrial department.

"Johnny" Law started with the Andrew Brown Co. in 1937, less than a year after he graduated from Stanford University. During the next eight years he gained experience in many departments with major emphasis in the automotive and industrial fields.

In 1946 he resigned to start his own paint manufacturing business which he operated until he returned to Andrew Brown Co.

Andrew Brown Co. manufactures Brolite finishes for aviation, industrial, automotive and marine use. Materials are produced in factories in Los Angeles; Irving, Texas, and Laurel, Md., as well as five overseas affiliated factories.

Organic Protective Coatings

Here is an informative and authoritative book about a variety of modern protective coatings for use in production finishing. Chapters are written by different authorities who are specialists on certain subjects. For example, Chapter 12 on Hot Spray Lacquers is authored by R. F. Wint and F. E. Piech of Hercules Powder Co.

Chapter 14, "Metal Protection With Synthetic Resin Coatings" is by E. E. McSweeney of Battelle Memorial Institute. Chapter 16, "Silicone Resins in Heat Resistant Paints" is by Myron Kin of Dow Corning Corp.

Other chapters include principles of formulation, anti-corrosive pigments, luminescent coatings, reflectance and color matching, vinyl resins, emulsion and latex paints, etc.

The book has 386 pages, 6x9-in., is divided into 16 chapters and contains a number of interesting illustrations.

It is edited by William Von Fischer and Edward G. Bobalek, both of Case Institute of Technology. It is durably and attractively bound between stiff covers of brick red and lettered in gold. Price, $7.50. Copies can be obtained from *Industrial Finishing*.

Industrial Finishing Show in Public Auditorium, Cleveland, Ohio, June 20-23. For information write to Harold E. Bartlett, 1955 Industrial Finishing Exposition, % American Decorating Co., 1849 W. 24th St., Cleveland 13, Ohio.

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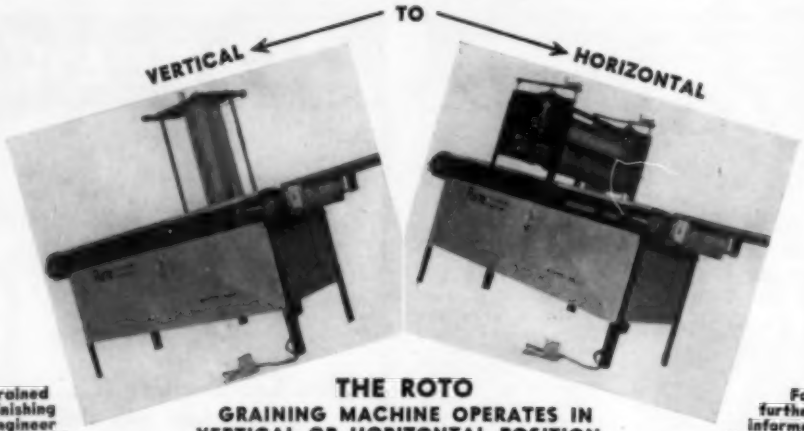

Trained Finishing Engineer available to supervise installation and initial finishing problems.

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GRAINING MACHINE OPERATES IN VERTICAL OR HORIZONTAL POSITION.

This H-V model grains face up, and is designed for conveyorized systems, having its own conveyor full width of printing surface. Other graining models available, include vertical and horizontal edge banders, horizontal 50", horizontal self-drive for heavy paper or metal in rolls.

For further information write, wire or call Newmark 8-1778 or Newmark 8-6691

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Use Dye Solutions to Match Colors

THE JOB FINISHER is often required to produce sample parts for a prospective customer. Many times he is at his wit's end trying to obtain a match somewhere near the correct color that his customer demands. This is particularly true where interior decorators or designers are involved.

Some job finishers—and even the finishing departments of large industries—have found that by keeping concentrated dye solutions of yellow, red and blue on hand, they are able to tint some of the opaque pigmented materials they normally carry, to produce the desired color. This is particularly true (and most effectively done) on aluminum paints and silver hammertone materials, but the plan can also be used to make pink and ivory colors from white enamels or lacquers. In some instances a topcoat of clear with some dye will accomplish the purpose.

It is usually more economical and practical to carry these three dyes in stock, for emergency sample use, than to attempt to have thousands of different colors available, particularly in areas where fire laws prohibit the storage of large supplies of paint. With a little practice, some remarkable results can be obtained with these dye solutions.—*N. I. Gaynes.*

Baking the Finish on Plastic Compact Cases

A FINISH baking problem faced a cosmetics manufacturer . . . . baking painted designs and lettering on plastic compact cases. Because of the critical temperatures of both paint and plastic, a heating system was required that would bake the paint without melting or blistering the plastic. Adding to the delicacy of the situation was the fact that paint and plastic colors, and sizes and shapes of the product varied considerably, requiring quick adjustment of facilities on short notice.

After trying various methods, easily controlled far-infrared was decided upon, and four Chromalox electric radiant heaters were selected. Far-infrared is absorbed at nearly equal speed by all colors, providing fast, uniform paint baking while simplifying the heat control problem.

Installation was easily made by mounting the heaters on light framing right over the conveyor line. With a capacity of 7.2 kilowatts they are arranged in two heat zones, each of which is controlled by one input controller. These controls are infinitely variable so that heat can be measured accurately for this critical heating job.

Only a small space is required by the compact heaters, and even this can be utilized by removing the portable units from the conveyor when it is desired to use the space for assembly work. In addition, maintenance costs of the all-metal heaters are very low.—*Edwin L. Wiegand Co.*

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There's no mistake about it! This is your finish, it belongs to you. It was made to fit your needs by a team of skilled technicians always ready to serve your slightest problem. That is why we tell you on every label that this finish was made for the very important YOU as the head of a very important department . . . finishing. What is more important, this specialized finish costs no more than an "off the shelf item." Try us and see.
TENAX NEWARK 5, N. J.

Random Comment on the Industrial Scene

(Continued from page 8)

Where a process strays beyond the pre-set control zone the scanning stops at that point and actuates an alarm or flashes a signal. The indicator dial shows the extent of the deviation. Associated control systems may automatically correct the condition.

Additional information may be had by contacting Fielden Instrument Division, Robertshaw-Fulton Controls Co., 2920 North Fourth St., Philadelphia 33, Pa.

* * *

More Paint Sold. The National Paint, Varnish & Lacquer Association reports that February sales of finishing materials totaled $104,203,000. This is 4.2% ahead of February 1954.

"They may marry any day now. He has designs on her!"

Masonry Paint. Glidden Co. has brought out a free flowing polyvinyl acetate emulsion that dries to touch in 30 minutes. It is recommended for use on concrete, stucco, concrete blocks, asbestos shingles and asphalt shingles. It has excellent resistance to wear, fading, staining, peeling, mildew, alkali and most acids.

This paint is available in 12 colors, white and 18 additional intermix colors. It is called "Spred Glide-On."

* * *

Safety Paint Code. In one of the steel mills color has been used as a safety device in the following practical way:

Non-critical machine parts have been painted green; critical parts, cream; controls, red; the electrical system, orange.

Before the painting plan the department's best safety record was 1,027,000 man-hours without a lost-time accident. Since the painting, there's an all-time safety record of 4,858,579 man-hours without a lost-time accident.

* * *

Furniture Business so far in 1955 is looking up, according to a report by the National Association of Furniture Manufacturers. Orders are about 20% ahead of same period last year. Total shipments for the first two months of this year exceeded by 2% last year for the same time. Unfilled orders for the first two months were 28% greater than the first two months in '54. The average work-week got back into the overtime column with an average of 41.3 hours per week, (up from 38.6 hours in January).

Now if the industry can hold the line and improve its position for the balance of the year, everything is going to be just fine.

Glidden Promotes Two Men in Foreign Operations

Appointment of two Glidden men to new key posts concerned with the development of overseas and industrial business is announced.

G. S. Forbes and A. J. Duncan

Andrew J. Duncan, named manager of International Business, will supervise all Glidden activities pertaining to expanding foreign operations, including exports, the manufacture and distribution of Glidden products overseas.

New field manager for National Industrial Sales is George S. Forbes, who with Thomas N. Armel, general manager of Industrial Sales, will supervise all phases of the industrial coating business.

Mr. Duncan has been an executive in Glidden's Paint Division since 1951. He is a graduate of Princeton University and the John Marshall School of Law.

Mr. Forbes, with Glidden since 1939, is a graduate of Ohio University.

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REPRINTS AVAILABLE

"Industrial Paint Samples 'Big Deal'," price 10 cents per copy.

"Cleaning and Conditioning Metal Surfaces for Coatings", price 20 cents per copy.

"A Half Decade of Finishing Progress," price 10 cents per copy.

"Tumble Finishing," price 10 cents per copy.

"Flow Coating as a Means of Paint Application," price 10 cents per copy.

"A Method Engineer Analyzes Paint Selling," price 10 cents per copy.

"Preparing and Painting Metal Specialties", price 10 cents per copy.

"Flock (What it is, its appearance, its uses both for utility and decoration)", price 10 cents per copy.

"Filler, The Theory and Technique of Application", price 10 cents per copy.

"Finishing System for Magnesium", price 10 cents per copy.

"Rapid Electrostatic Finishing", price 10 cents per copy.

"Automatic Viscosity Control for Mass Production Finishing", price, 10 cents per copy.

"Paint Users' Tests; Be Fair; Get Results", 10 cents per copy.

INDUSTRIAL FINISHING Magazine

1142 N. Meridian, Indianapolis 4, Ind.

Navicote Distributed By Beebe

Navicote marine finishes are now being distributed in the Pacific Northwest by The Beebe Co., 504 S.W. 1st, Portland, Oregon. Their appointment is announced by Hart and Burns Co., a Division of Devoe & Raynolds Co., Inc.

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PRIMERS—Excellent adhesion, less sanding.
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Complete Custom Finishes Since 1865
CINCINNATI VARNISH CO.
CINCINNATI 12, OHIO

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The rate on ads appearing in this department is $1.00 per line of 6-pt. light face type, per insertion. Minimum charge, $5.00. Ads set in 8-pt. extra bold face type cost $2.00 per line, per insertion.

SITUATION WANTED.

Young, experienced serviceman-salesman would like to join progressive mid-eastern manufacturer of stains and fillers, lacquers, sealers. Resume sent on request. Address IF-328, Care Industrial Finishing.

POSITION WANTED.

SALES EXECUTIVE available with 28 years' experience selling and merchandising paint, varnish and lacquer. Specializing in industrial finishes. Excellent reputation, 46 years old. Address IF-326, care Industrial Finishing.

CAN YOU WRITE?

If you can write a letter or simple report on using, servicing or selling finishing materials or equipment, we have an interesting proposition for you. Address IF-234, care Industrial Finishing.

FINISHING SUPERINTENDENT WANTED.

Experienced in operation and paint methods relating to roll coating of aluminum and steel. State qualifications, references and salary desired. All applications will be held in strict confidence. Address IF-319, care Industrial Finishing.

FINISHING FOREMAN.

Missouri furniture factory requires a first-class finishing foreman. Company well established making nationally-known line. Top pay with bonus to man of seasoned experience in on time production of quality furniture. Give full qualifications, past ten-year employment record, including present position and salary. Present employer will not be contacted. Address IF-320, care Industrial Finishing.

Finishing Department FOREMAN

A long established progressive New England metal fabricating plant needs a man qualified to supervise its complete finishing operations. Man chosen would be responsible for wide variety of plating, still and barrel operations, automatic and hand buffing and lacquer finishing, tumbling barrel operations, and dip cleaning. This man should have the proved ability to organize work and personnel in order to get a maximum amount of production out of the available facilities which have been recently renewed and renovated. In return he will earn a good salary and be covered with fully paid life, hospital, and surgical insurance programs as well as participating in a liberal pension plan. If you qualify send complete details to

IF-318, care of
INDUSTRIAL FINISHING
Magazine
Indianapolis 4, Ind.

SERVICE MAN WANTED.

Chicago industrial finish manufacturer is seeking a man with general finishing shop background for field service work. Starting salary, $400 per month. If interested, write giving personal information and details of experience. Address IF-321, care Industrial Finishing.

WANTED— TWO COATING FORMULATORS.

The services of two formulators, one for wood lacquers and the other for metal and wood enamels, are desired for the expanding laboratory of an AAA-1 manufacturer of industrial finishing materials. We are located on the coast of Southern New England. Please be assured that your prompt reply will be held in strict confidence. Address IF-322, care Industrial Finishing.

SALESMAN—INDUSTRIAL FINISHES.

Well established and expanding manufacturer in the Newark area will consider an experienced man with proven record of achievement selling industrial finishes. Our proposition and an exceptional opportunity for security and high earnings allow us to insist on highest qualifications. Answer in detail. Replies confidential. Address IF-290, care Industrial Finishing.

FIELD SALES MANAGER.

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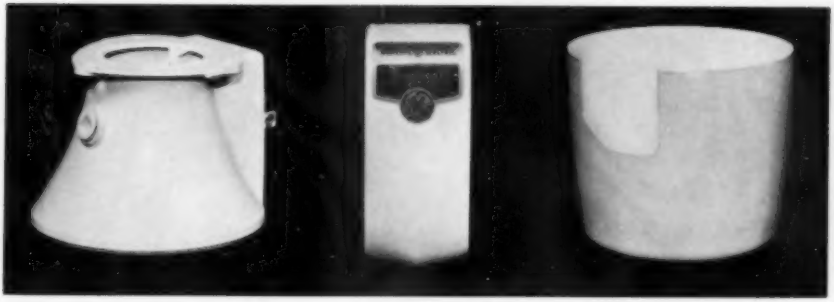

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